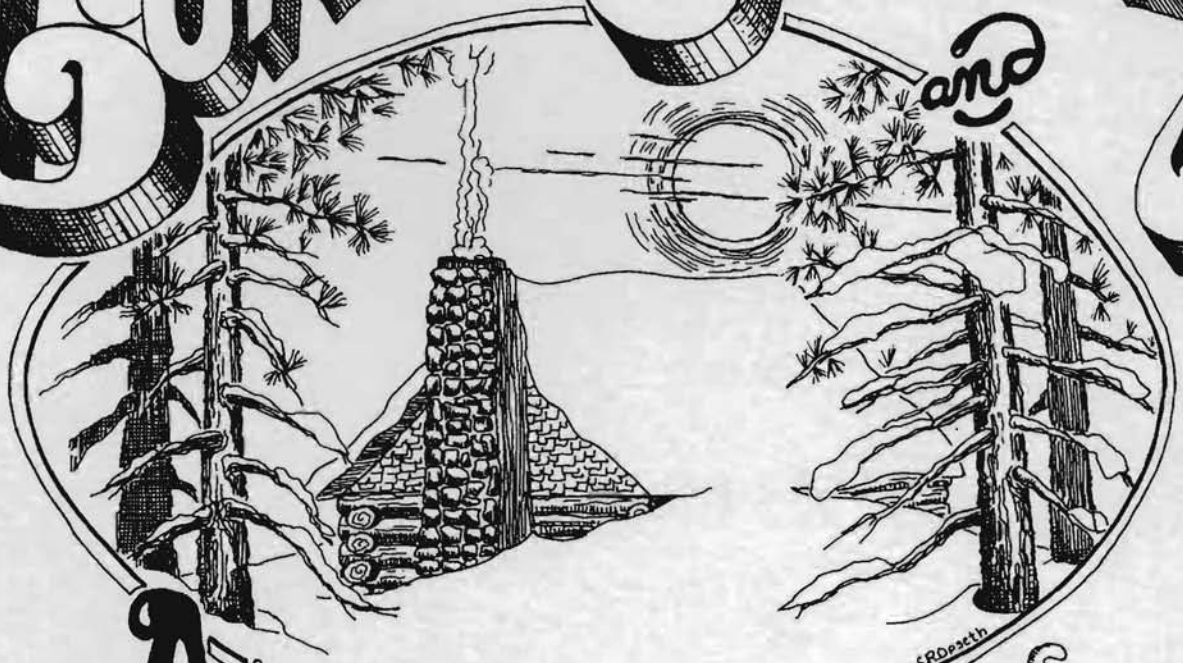
1980 Gopher Peavey and Alumni News



Raymond A. Jensen
Associate Scientist
Cloquet Forestry Center

The 1980 Gopher-Peavey-Alumni News is dedicated to Raymond Jensen. We would like to show our appreciation to him for his service to the College and its community throughout the many years he has been with us.

Born and raised in Cloquet, Minnesota, the City of Wood Industries, and survivor of the 1918 Cloquet fire, there is little wonder that Ray transferred in 1935 from Duluth Junior College to forestry at the University of Minnesota in St. Paul. With "Doc" Schmitz as his advisor he graduated in the Class of 1937 and started work for the University at Cloquet. Drafted in September 1941, his employment at Cloquet was interrupted by WW II. After touring the South Pacific with the Army Engineers, he returned to the Cloquet Forest in 1946.

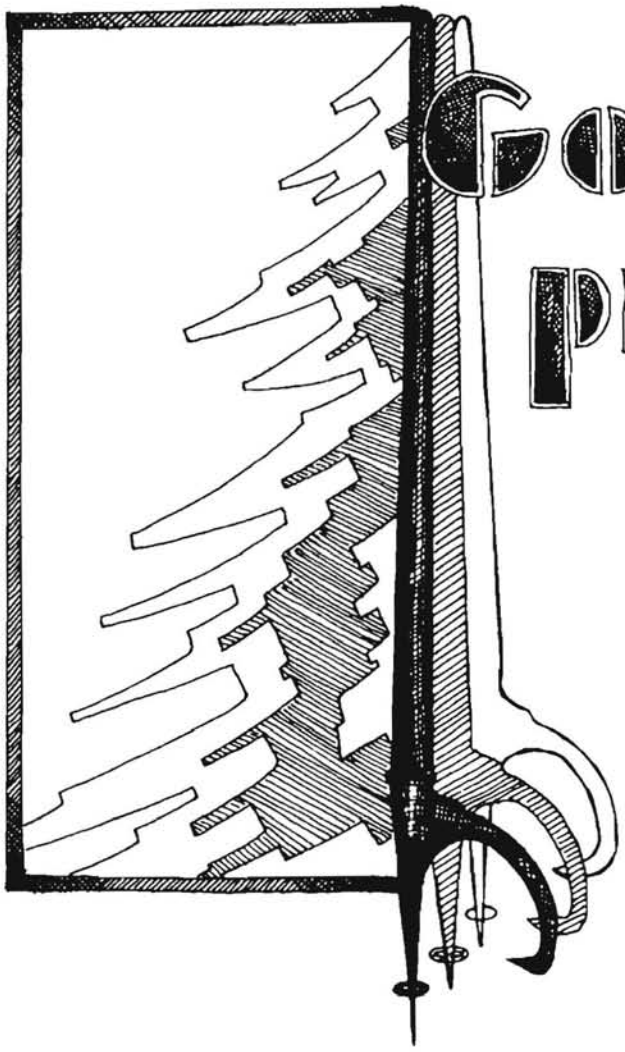
During his many years at Cloquet, he has seen logging methods change from horses, to crawler tractors, to rubber-tired skidders. His detailed observations and records of forest developments, weather and research plots have been the basis for many graduate student and faculty research papers. Growth and yield, inventory systems, jack pine seed sources (range wide and regional), logging methods and regeneration are among the noteworthy studies in which he has had major involvement.

Students, visitors, or anyone interested instry could always rely on Ray to conduct a stimulating forest tour and discussion of activities at the Center. Field day organizers, schools, colleges and oups of all kinds found him always ready to assist with their programs offered at the Center. Ray was an active participant and past officer in the Carlton County Keep Minnesota Green Committee throughout its many years of operation. After its demise, he co-authored a history of this unique group.

As forester at the Cloquet Center, Ray worked with students during the Cloquet sessions for nearly forty years. Undoubtedly he has been in the field with more forestry students than anyone else at the College. Students have found him willing to provide first-hand knowledge of events and developments on the forest adjacent territory.

His dedication and sincere interest in finding better ways to treat the forest have provided the long-term continuity and devotion to record keeping which are the basic foundation for an operation such as the Cloquet Forestry Center.

Retirement in July 1980 will provide Ray the opportunities to pursue his interests in plant collecting and logging-railroad history. Students, colleagues and friends extend their best wishes for a long and eventful retirement.



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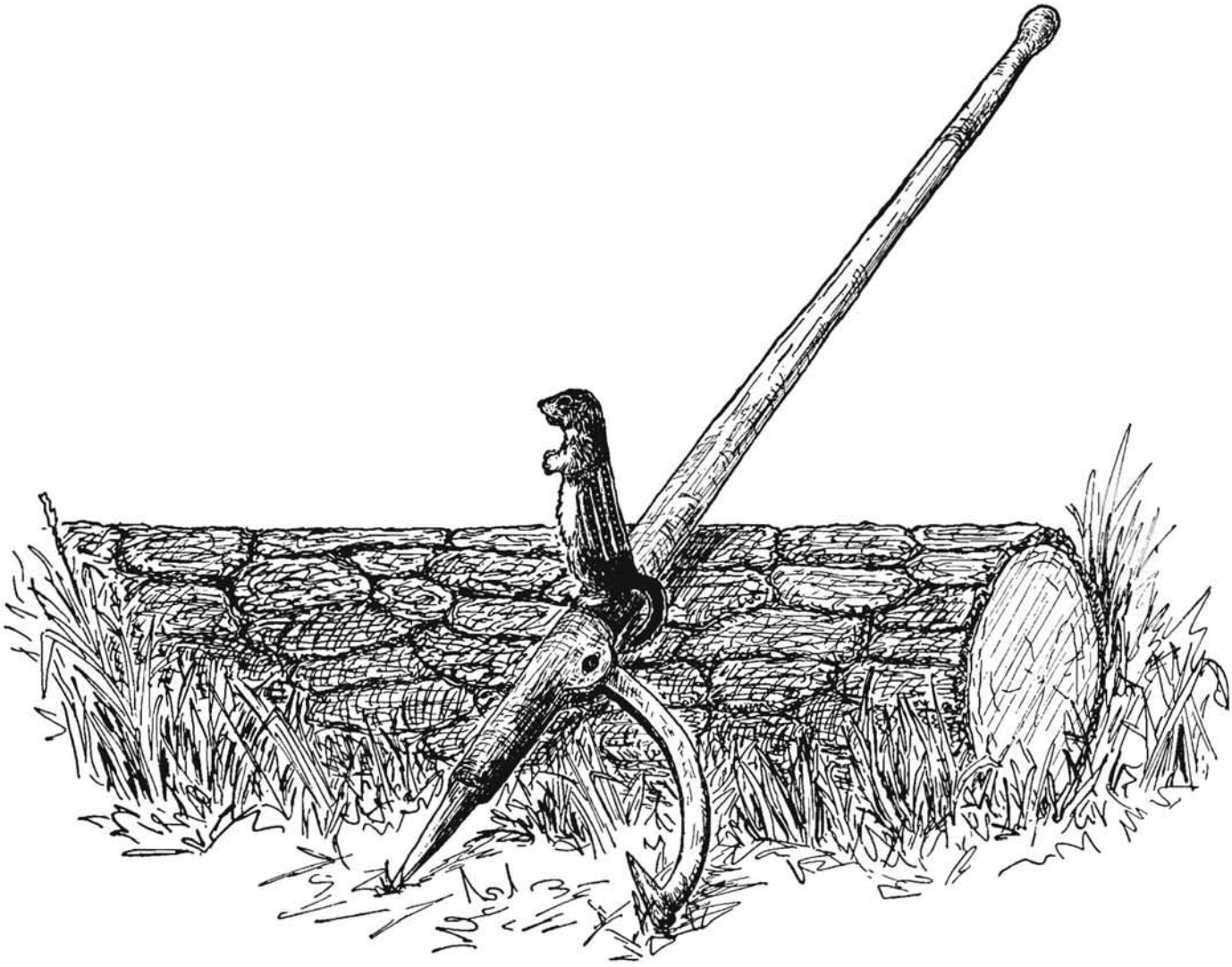

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RESEARCH

U.S. Forestry Research

Programs, Planning, and Application of Results

by Marsha Samways
Research Specialist and Assistant to the Dean

My charge from the *Gopher Peavey* editors is to provide an overview of U.S. forestry research programs and processes with particular emphasis on planning/priority setting and dissemination/application of results. I hope the following remarks will provide some perspective on these subjects as a preface to the comments of College of Forestry alumni.

U.S. Forestry Research Programs

John D. Sullivan of the USDA has estimated total expenditures in this country for forestry and rangeland research in 1975 were $217 million.[1] In rough terms, approximately 40% of this research effort was conducted (not equivalent to that funded) by private industry, 30% by the U.S. Forest Service, and 20% by state universities. The remainder of forestry and rangeland research was conducted by state agencies, other federal agencies, and private research institutions.

Industrial research programs have largely developed since 1920.[2] Much of the early impetus for this research came from the developing wood-based chemical industries which manufactured such products as pulp and paper, lacquer, and chemicals. The primary focus of the research was then, as it is now, on the development of new products and utilization processes. Sullivan estimates product/utilization research today constitutes about 75-80% of industrial research. Research relating to land Management is conducted primarily by larger firms, with five firms probably accounting for 95% of the expenditures.

Although forest products industries conduct a large proportion of current forestry/forest products research, they generally lag behind many other industries in research expenditures. For example, in 1976, research expenditures by 20 major U.S. pulp and paper and wood building materials industries averaged about .7% of sales compared to an average of 2.1% over all industries.[3] Forestry research in the Department of Agriculture can be traced back to 1876, but the establishment of a Research Branch within the Forest Service did not occur until 1915.[4] This was followed 13 years later by passage of the McSweeny-McNary Forest Research Act which greatly strengthened the Forest Service research program by providing Congressional authority for forestry research activities in the USDA and by authorizing increased appropriations for this purpose.

The Forest Service now has a highly decentralized research program conducted by eight regional forest and range experiment stations and a national Forest Products Laboratory in Madison, Wisconsin. Each experiment station, in turn, has a number of satellite stations, called Forestry Sciences Laboratories. Our neighbor, the North Central Forest Experiment Station, has eight such substations in Minnesota, Wisconsin, Michigan, Illinois, and Missouri.

Marsha Samways

The research programs of the Forest Service are directed not only to needs of the national forest system, but also to needs of state and county agencies, private land owners, and private industries. In 1975, on a national level, 26% of the Forest Service's research efforts (measured in scientist-years) were devoted to forest protection; 24% to timber management; 22% to wood products; 12% to watersheds, soils, and pollution; 6% to multiresource inventory; 6% to forest range and wildlife; and 3% to recreation and environmental values. Fourteen percent of the total research effort was conducted by the North Central Forest Experiment Station. The relative emphasis given various areas of research by this station is similar to that on a national level, except more effort is devoted to timber management research and less to wood products research (much of which is done by the Forest Products Laboratory).[5]

College and university forestry research takes place in a variety of institutional settings. Some of the first forestry schools established in the U.S. around the turn of the century were at private universities such as Harvard and Yale. The research programs of these schools are largely funded through private funds and public grant/contract funds.

The vast majority of university forestry research is conducted by faculty of forestry schools located at state universities. In most cases, the state universities at which forestry schools are located are also the land-grant colleges of the state. This means that these institutions were designated by the states as the recipients of federal funding made available by the Morrill Act of 1862 "to teach such branches of learning as are related to agriculture and the mechanic arts . . . in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."[6] The funding for these educational endeavors was derived from the sale of federal lands allocated to the states for this purpose. Most state colleges of agriculture were developed or, if already established, were greatly strengthened through the land-grant funding. Some, such as that in Minnesota, were established as a component of existing state universities. Others were established at a new land-grant institution.

To complement their teaching endeavors in agriculture, some land-grant schools soon established agricultural experiment stations to conduct experiments which would begin to provide the practice of agriculture with a scientific foundation. The Hatch Act of 1887 strengthened the research programs of existing stations and encouraged other states to establish such stations by authorizing annual federal funding for this purpose. Still later, in 1914, an extension component was added to land-grant schools by the Smith-Lever Act, which authorized matching federal funds "to aid in diffusing among the people of the United States useful and practical information on subjects relating to agriculture and home economics, and to encourage the application of the same."[7]

Because most forestry schools at land-grant institutions evolved out of, or are still a part of, the colleges of agriculture developed through the Morrill Act, they too have the triple missions of instruction, research, and extension. Research programs are funded in several ways. First, under the authorization of the McIntire-Stennis Cooperative Forestry Research Act of 1962, Congress annually appropriates funds for forestry research at state institutions. These funds, like Hatch Act funds, are administered by the Cooperative Research division of the USDA Science and Education Administration. Because McIntire-Stennis funds are distributed to states according to a formula based on state forest land acreage and other factors, they are often referred to as "formula funds."

At land-grant institutions, the agricultural experiment station and not the forestry school is generally the recipient of McIntire-Stennis funds, although the majority of the research may be conducted by faculty whose principal appointments are in the schoolof forestry.

A second major source of forestry research funds for land-grant institutions are state appropriations. Federal research funding under the McIntire-Stennis Act must be matched by non-federal forestry research funding. Many schools derive a major portion of this matching funding from state appropriations to the agricultural experiment station for agriculture, home economics, and forestry research.

Federal and state appropriations for research are often collectively referred to as "hard money" because funding levels are *relatively* level from year to year, and these funds, therefore, provide a stable foundation for an institution's forestry research programs. Because appropriated funds are typically received and administered by the agricultural experiment station at a land-grant university, forestry school faculty must hold a second appointment with the station to be eligible to conduct projects with these funds. They then may submit project proposals for approval by administrators of the forestry school, the director of the agricultural experiment station, and, in the case of federal funding, the USDA.

The final major source of funds are grants, contracts, and cooperative aid agreements for research from a variety of public agencies and private industries and foundations. While the use to which appropriated funds are put is typically left to the discretion of the administering agencies, grant and contract funds are awarded on the basis of a specific project proposal submitted by a faculty member. Projects must be completed within a specified period of time. Since funding ceases with project completion, grant and contract funds are often referred to as "soft money."

Grant and contract funds differ from appropriated research funds in that they are typically distributed directly to the project leader and the academic unit in which he/she holds an appointment and not to the agricultural experiment station. Although contracts may require the approval of the director of the station, the station plays no part in management of the funds.

Faculty may use contract funds to expand their agricultural experiment station projects. Or, they may conduct two or more projects simultaneously — some funded by the experiment station and some by grants and contracts.

The sources of research program funding for state-supported forestry schools *not* located at the state's land-grant institution (for example, Michigan Technological University) are much the same as those for schools at land-grant universities. Administration of research programs differs, however, because such institutions typically do not have an agricultural experiment station.

At all academic institutions offering graduate education in forestry, research projects are important not only for the knowledge they yield, but also for the experience they provide graduate students. The realization that participation in research projects as graduate research assistants is essential to the education of future forestry and forest products scientists was one of the major reasons for authorization of the cooperative forestry research program by Congress in the McIntire-Stennis Act.

Research Planning and Priority Setting in the U.S. Forest Service and State Universities

No matter how high the quality of a research study, it will be of little value if it is focused on a problem of minor importance or if it duplicates work done elsewhere. The following discussion will focus on some of the mechanisms the U.S. Forest Service and state universities have for setting priorities and planning and coordinating research. By focusing on these two groups I do not mean to imply research done by other public and private organizations is less important — just that I am less familiar with other research programs.

The U.S. Forest Service and state universities each have a variety of ways to identify research needs and set priorities. Some of these mechanisms are shared. For example, the Forest Service and the forestry schools, through the Association of State College and University Forestry Research Organizations (ASCUFRO), an organization of representatives from each institution receiving McIntire-Stennis research funds, together participate in the National-Regional Agricutural Research Planning System. This is a hierarchical system of the USDA and National Association of State Universities and Land-Grant Colleges sponsored by the Joint Council on Food and Agricultural Sciences, an advisory group to the secretary of agriculture established under Title XIV of the Farm Bill of 1977 to foster and coordinate agricultural (including forestry) research, teaching, and extension.

Heading the planning system is a National Planning Committee (NPC) composed of agriculture and forestry research program administrators. The NPC establishes guidelines for agriculture and forestry research reporting and publishes reports describing the research programs of participating organizations and needed future efforts.

These reports are updated annually and are based on needs and priorities established through a regional network of planning committees for specific research program areas, such as forestry. The regional committees are composed of research administrators and scientists who communicate not only their own perceptions of needed initiatives, but also research user concerns indentified by the individual agencies and institutions they represent.

When needed, the NPC or the Joint Council may sponsor special planning conferences or programs to complement ongoing planning activities. For example, in 1976, the Agricultural Research Policy Advisory Committee (predecessor of the Joint Council) initiated an in-depth examination of the content and conduct of forest and associated rangeland research by the USDA and by state universities participating in the McIntire-Stennis Program. Representatives of a wide variety of land management, industry, conservation, and other research user organizations were invited to a national and four regional working conferences held in 1977 and 1978 and asked to idenfity and prioritize what they believed to be the needs in forestry and rangeland research. Problems identified at the conferences were used by university and Forest Service administrators and scientists to develop national and regional programs of research published in 1978. The programs identify areas and problems to which increased research effort should be devoted, as well as areas that should be de-emphasized. They will be used by universities and the USDA to guide research planning through 1985.

In addition to input on research needs received through the National-Regional Agricultural Research Planning System, the Forest Service receives input through their RPA planning activities and from requests for information by research users.[8] Also, once a year, members of the National Forest System Branch, state foresters, and members of other research user groups outside the Forest Service are invited to submit Research-Need Statements to their regional forest experiment stations.

Needs identified at the regional or station level are communicated upward to the research staff in the Forest Service Washington Office where they are combined and translated into statements of needed initiatives on a national level. The experiment stations assigned to carry out a national initiative may not necessarily be those which identified the program as a need. Thus, the Washington Office became another source of guidance to experiment stations in planning their program content.

Eventually an experiment station must mesh statements of research needs from all these sources and translate them into study plans on the basis of problem priorities and available resources. This is done on the individual work unit level. Work units are groups of one to 10 scientists working together in a specified research subject area — for example, Back-country River Recreation Management Research. Each work unit is headed by a project leader and operates under a charter signed by station administrators on the one hand and the scientists on the other. This charter is for a specified period of time not to exceed five years and identifies the problem(s) to be solved by the work unit during that period. The charter is drafted by the project leader but incorporates initiatives suggested by station administrators on the basis of identified needs and priorities. All charters must be approved at the national level, at which time the Washington Office staff checks for duplication of effort by stations and appropriateness of the work unit to national needs.

When the work unit charter is approved, scientists analyze the problems it presents and develop a series of individual study plans which they believe, in the aggregate, will provide the information needed for their solution. As the work of a unit progresses, study plans may be revised or their charter modified or even revoked. This may occur as a result of internal station reviews of units conducted every two years, from reviews of all station work units conducted every three years jointly by station administrators and the Washington staff (combined program reviews), from adjustments to unit budgets during the annual station budgeting process, from personnel changes, and, finally, from new knowledge gained as studies progress.

Research planning within universities is more difficult to characterize as each institution differs somewhat in the procedures they employ to identify and prioritize needs and translate these needs into programs of work. Like the Forest Service, universities identify needs and priorities in part through participation in the National-Regional Agricultural Research Planning System. In addition, many universities have research user advisory groups and/or conduct ad hoc reviews of research user needs. An example of such an ad hoc review at the University of Minnesota was an independent study contracted by the Department of Forest Products in 1975 to examine the technological problems being faced by Minnesota forest industries in the utilization of the state's timber resources and the role the department could play in helping to solve these problems.

Another source of guidance to forestry schools at land-grant universities are Agricultural Extention faculty. These faculty have frequent contacts with forestry professionals and with the general public as they plan and conduct extension education programs and are often able to identify the research needs and concerns of these groups. Research program reviews conducted periodically by the USDA of all institutions receiving McIntire-Stennis funds are still another source of guidance. Scientists themselves are often well aware of many of the research needs within their areas of specialization through their field contacts.

"If practitioners dictated the content of research programs, scientists would be continually reinventing the wheel"

The ability of universities to quickly respond to identified research needs is, perhaps, more limited than that of the Forest Service. Forestry schools have more limited resources at their disposal which results in less program flexibility. Also, under university tenure codes and academic freedom policies, faculty generally have more freedom of choice in the research work they pursue than their Forest Service counterparts. However, proposals for projects to be funded with agricultural experiment station funds are usually developed with considerable dialogue between scientist and department head, and the proposed project's relationship to departmental goals discussed. Administrators of the College, agricultural experiment station, and Cooperative Research division of the USDA, all of whom must usually approve proposals, may also make suggestions for revision if they feel the proposed project is out of tune with needs.

The extent to which projects funded by grants and contracts are focused on high priority needs is largely a function of faculty discretion in developing and submitting proposals. If the grantor specifies the problem(s) to be addressed, the only opportunity a faculty member has for exercising this discretion is in deciding whether or not to submit a proposal. If the invitation for proposals is more open-ended, the faculty member has a greater opportunity to develop projects focused on high priority problems.

Forestry school administrators play a major role in determining the direction of research programs through the hiring of new faculty who have specific areas of expertise. Because most faculty play dual roles as instructors and researchers, consideration must frequently be given to instructional needs as well as research needs in such hiring, however. The need to offer a balanced curriculum necessitates having a well-rounded staff. Only after a school has acquired this "base" staff can it begin to strengthen its faculty complement in subfields chosen for emphasis in research. Minnesota was fortunate to reach this stage in the last decade.

Although the U.S. Forest Service, universities, and most other public agencies conducting forestry research have given increased attention in recent years to improving their research planning and focusing their programs on the most important problems, much room for improvement undoubtedly still exists. Continued interest in research programs and institutions by professionals and the public, coupled with constructive criticism, will help ensure improvement occurs. However, for several reasons, the ability of research institutions to quickly respond to research needs and problems may never be as great as the profession or public might wish. First, research studies, especially in forestry, may require many years to bear fruit. In contrast, perceptions of research needs and problems may change very quickly. Because the resources for research will always be limited, research scientists and administrators are frequently faced with the choice of immediately responding to a new need or bringing to a satisfactory conclusion a study in which a great deal of effort and money has already been invested.

Secondly, research institutions are constrained by the expertise of their personnel. An organization may identify recreation research as its highest priority, but this does not mean all silviculturists and forest products specialists on the staff can be replaced by recreationists. Changes in staff composition can usually be made only slowly as members leave or new positions are gained.

Dissemination and Application of Research Results

Many of us have heard statements by forestry practitioners, on the one hand, that researchers are out of touch with reality and by scientists, on the other, that if practitioners dictated the content of their research programs, they could be continually reinventing the wheel. Although these may be extreme points of view, they are indicative of a need to improve the delivery of research findings to research users. This need surfaced repeatedly during the 1977 and 1978 research users conferences described earlier.

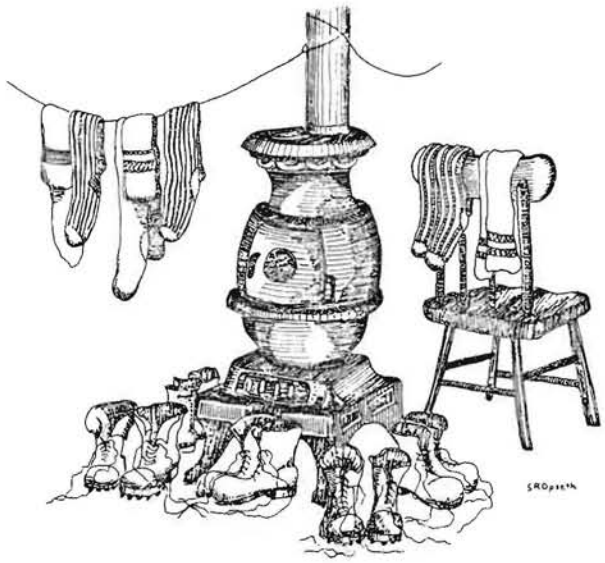
Perhaps one of the major reasons why research results are not utilized as fully as they could be is that the responsibility for technology transfer has not, in the past, been firmly fixed. Some scientists have considered their job finished with the publication of a paper in a scientific journal. This is probably partially the result of traditional scientist reward systems in which promotions and salaries reflected quality and quantity of original research with little recognition to the amount of time and effort a scientist might devote to helping practitioners apply research results. This reward system is coming under increasing scrutiny; some changes have been made, and others can probably be expected. However, serious consideration should be given to how far the responsibility of the scientists extends in the communication arena. It would seem reasonable that scientists would benefit from some direct interaction with research users. But is requiring that scientists devote 25% or 50% of their time to disseminating their results and helping in their application an efficient use of personnel? Furthermore, scientists are not, for the most part, trained communicators and vary in their ability to communicate in writing and orally with a wide variety of audiences.

The role of practitioners in technology transfer also needs to be defined. Professionals undoubtedly have a responsibility to keep current with new developments in their field. But is it feasible for practitioners to search the scientific literature for answers to each management problem given the remote locations of many field offices and the time constraints under which they must work? Given a lack of training in research methods, is it even within the capabilities of practitioners to sort through, interpret, and fit together bits and pieces of research information until they can formulate comprehensive solutions to their problems?

D.R. Johnston, director of research and development for the United Kingdom Forestry Commission, stated, "A considerable body of potentially useful research information . . . is never made intelligible to forest managers or its significance is not put into perspective. From the point of view of the field manager a long and sophisticated research paper which sets out in detail the experimental methods, the experimental results, and their analysis is almost useless."[9] R. Keith Arnold recognized the same problem at the 1973 SAF Continuing Education Symposium when he stated, "A manager needs help. He needs help to separate the wheat from the chaff, to screen off the noise from the music, to distill the essence of the information he really needs."[10]

If there is still a gap between research output and the need for information about the responsibilities and roles of the practitioner and scientist have been defined, this gap could be filled by a third cadre of professional foresters — people who have the ability to interpret scientific procedures and results, extract those portions which meet a particular need, use them to develop operational procedures and guidelines, and, finally, package these procedures for appropriate user groups. These individuals already exist in organizations specifically established, in part, to ensure research results reach those who need them. Two such organizations are the Agricultural Extension Service and the State and Private Forestry Branch of the U.S. Forest Service. Both these organizations are far too understaffed and have far too many other responsibilities, however, to handle more than a small fraction of the job of technology transfer. In the College of Forestry, for example, we presently have the full-time equivalent of 4.5 extension specialists to handle the job of technical education and assistance for professionals as well as education of lay public groups. Although the Renewable Resource Extension Act of 1978 authorized additional federal funding for state renewable resources extention programs, this funding has yet to be realized.

The State and Private Forestry staff located at North Central Forest Experiment Station currently numbers about 16. This group has conducted or sponsored many training programs tailored to the needs of professional groups, particularly state DNR's. However, their resources are also too limited to handle all that needs to be done, considering the other responsibilities also assigned to them.



Many other individuals and groups have attempted to fill the gaps in technology transfer, including editorial and information staff within the Research Branch of the Forest Service and staff specialists within the management branch of the Forest Service and other management organizations. This raises another question which should be considered. Should technology transfer be performed by each organization having an interest in the production and/or application of results, or should the responsibility for this function be more concentrated in one or two organizations?

Although the job of technology transfer may seem immense, the increasing recognition being given to the need in recent years has already resulted in many innovative efforts and will probably provide the impetus needed to make further progress. The fact that, in February 1979, the U.S. Forest Service held a Technology Transfer Workshop in Tucson, Arizona, provides evidence that the wheels are turning in the right direction.[11]

Notes

1. *Sullivan, John D. 1977. A review of forest and rangeland research. In A Review of Forest and Rangeland Research Policies in the United States (Washington, D.C.: The Renewable Resources Foundation, 45 pp.), pp. 38-44.*
2. *Kaufert, Frank H. and William H. Cummings. 1955. Forestry and Related Research in North America. (Washington, D.C.: Society of American Foresters, 280 pp.), p. 38.*
3. *Where private industry puts its research money. Businss Week, June 28, 1976, pp. 62-84, cited in Sullivan.*
4. *Kaufert and Cummings, p. 34.*
5. *Joint Task Force of U.S. Department of Agriculture and National Association of State Universities and Land-Grant Colleges. 1977. National Reference Document for National Program of Reesarch for Forests and Associated Rangelands (Washington, D.C.: U.S. Government Printing Office, 36 pp.), pp. 26, 32.*
6. *Madsen, David. 1976. The land-grant university: myth and reality. In Land-Grant Universities and Their Continuing Challenge, ed. G. Lester Anderson (Michigan State Univ. Press, 354 pp.), p. 34.*
7. *Madsen, p. 40.*
8. *Much of the information on U.S. Forest Service research planning procedures is from personal communication with Denver Burns, deputy director, North Central Forest Experiment Station, U.S. Forest Service.*
9. *Johnston, D.R. 1977. The application of research results in forestry. In Management of Forestry Research for Results (Proceedings of the Third Meeting of Subject Group S6.06 — Management of Forest Research, International Union of Forestry Research Organizations, Buckinghamshire, England, September 1977, 94 pp.), p. 41.*
10. *Arnold, R. Keith. 1973. Education for dynamic competence under expanding technologies. In Continuing Education for Foresters (Proceedings of a national symposium held by the Society of American Foresters, Corvallis, Oregon, June 27-29, 1972, 126 pp.), p. 20.*
11. *USDA Forest Service. 1979. Poster Presentations — Technology Transfer Workshop (Proceedings of a Technology Transfer Workshop, Tucson, Arizona, February 13-15, 1979).*

Evaluating Research:

Determining Topics and Priorities Communicating Ideas

compiled by Margi Gromek

To present and reflect the views of experienced foresters on the issues of research, the staff of this year's Peavey invited the alumni from the College of Forestry to respond to three questions relating to this theme. Their replies were numerous and varied. In order to express their opinions, we took viewpoints from both the researcher of forest problems and the field forester who implements the answers. Following each inquiry are some of the many conclusions received from the respondents. Their year of graduation is stated after their name.

1) Do the priorities set by research organizations reflect the information needs of professional foresters and forest products specialists, and is there adequate opportunity for input from the field?

The answers to the first part of this question were split evenly down the middle with a few mentioning that this is the case "only sometimes". The second half was split also, with a small edge favoring those who thought more input was needed.

Research priorities are reasonably well ordered as evidenced by the recent report: Program of Research for Forests and Associated Rangelands, North Central Region. There is a tendency to support research on certain subjects that are favored by the Forest Service, SEA and NSF in Washington. Such subjects appear to be favored in cycles. These reflect national goals, but not necessarily regional and local needs. Input from individuals or small groups in the field usually carry little weight. Discovery of some way of aggregating or weighting field needs would be valuable.

Richard C. Smith 1937

In the Journal of Forestry no. I'm in urban forestry and I am afraid my continuation with the S.A.F. is coming to a close due the inability of the Journal to facilitate my concerns. Even if I were a field forester the nesting habits of the Rufous-sided Towhee in unvirginated stands of 15-20 year ponderosa pine on east-west slopes between six and five every other Tuesday is not what I would call informational needs of professional foresters.

Mark C. Suhnobrich 1977

From my experiences working for the State of Minnesota I would answer "no" to both questions. The professional foresters I observed were limited by budget, not theoretics. Field foresters want to know how to do things, like improve growth on a marginal site, control a disease problem, or reduce a brush species; the whysare not so important. Too often the future needs of foresters are given priority and the present needs are forgotten. Generally a professional forester is the first person to know what information is lacking, not a researcher.

That leads to the second part of the question; I feel there is not an adequate opportunity for input from the field. Field foresters rarely mix with researchers and verbal communication is the best form of input. A questionnaire or phone call will simply be forgotten — perhaps research organizations should research and give priority to what professional foresters feel are their informational needs.

Sue Madson Brokl 1979

Setting priorities in forestry research ultimately becomes the responsibility of those who administor research programs. We hope that we listen to all of the voices, including scientists themselves, about research needs. In the final analysis, however, it is necessary to weight those needs against available funds and scientific personnel. In the short run, and even in the long run, we cannot satisfy all of the needs identified by users because the capacity to raise questions vastly exceeds the ability of science to answer them.

Robert Buckman 1950

I can't speak for all research organizations but can speak for the one I work for. The answer is that our priorities are based on the needs expressed by managers so they do reflect their needs. But managers often express needs for information on problems that are not researchable. These are often problems caused by social or political pressures and are not amenable to biological answers. Managers as a result often feel "let down" by researchers. There is plenty of opportunity for input from the field.

Don Schmiege 1952

I seriously doubt whether research organizations care about the needs of field foresters. As to opportunity for input — if there is, I am not aware of it being made known. Most of the field foresters I know think that researchers are out of touch with the needs for practical application of research.

M.J. "Mike" Latimer 1941

2) Are research results adequately communicated in a form appropriate for application by field personnel? If not, how can this communication be improved?

The responses were overwhelmingly hinging towards the negative. A majority of the respondents said more and better extension work was needed. Other suggestions mentioned several times included: too much basic and not enough applied research was being done, improvement of administration, and the futility of just publishing results when instead University professors and other researchers should be directly involved in technology transfer.

The answer to this question is clearly "no". Perhaps the most clearcut funding of the regional and national research planning conferences was one of inadequate communication of research results to potential users. Three or four steps need to be taken. First, a group of communication experts (such as Extension foresters) must be available (and competent) to convert technical research findings into a form useful to practicing professionals and other prospective users. Second, where added empirical exploration is required, they should be in a position to undertake it, or to see that it gets done. And third, they should be capable of clearly defining important problems which can be taken to scientists for needed research. In addition, it may often be necessary and desirable for the research scientist himself to become involved in communicating his research results to potential users in short courses, seminars or workshops.

Donald P. Duucan PhD 1951

In general I would say that research results are adequately communicated to the various individuals and agencies that have use for them. There are, nevertheless, situations where research results are not effectively applied. Small sawmills are a prime example. I feel that more work needs to be done in this area, especially in the form of field demonstrations and clinical approaches by ***skilled people.***

Lincoln A. Moeller 1935

The transfer of research findings in forestry from producer to user never has been adequate in the United States, due to the paucity of funding provided for forestry extension at both the federal and state levels. Technology transfer requires specialized personnel and the application of modern methods of communication, both of which require money. Hopefully, the new forestry extension legislation passed by Congress last year, may ultimately provide the necessary support that forestry extension must have.

Charles C. Larson 1940

It is important that research studies are broad enough to be applicable. Once the research is done its applicability should be described as part of the publication. Its shortcomings should also be described so the information is not misinterpreted and used out of context.

Duane L. Packer 1960

Here the answer is clearly no. Technology transfer or information exchange or whatever it is called is the most critical problem in the scientific world today in my opinion. Not just in forestry but all over. The answer is complex just like the problem. Managers need special training periodically to bring them up to date. Relying on managers to read research results has failed. They don't do it very well and often the results are written in such a manner as to be difficult to understand by non-researchers. This has been lamented for years but changes have been slow.

Don Schmiege 1952

I would like to see a much larger continuing education effort by the University — in which several refresher courses on varying topics would be offered annually to foresters from all backgrounds and organizations. For example, courses have been intermitently given on aerial photos/remote sensing, forest economics, land use and many others — but often only to select groups. I would like to see a quarterly or annual list of short courses offered at the Cloquet Forestry Center, College of Forestry in St. Paul or other locations.

If funded by State of Minnesota Legislature, this type of thing could go on without excessive cost to the students — who might also be helped financially by their parent organizations. Contact with University staff on this basis would provide a very adequate opportunity for field input on research priorities, as well as the flow of results back to field practitioners.

Jim Marshall 1974

The gap between research and practical field forestry is a chronic, world-wide problem. We must first recognize and agree that there is much basic research which has no direct application but provides the essential foundation information for work more directly related to current problems. Beyond this basic research, however, in the field of applied research there is need for much better communication of needs, results, and application among practical and research foresters. Bureaucracy and organizational superstructures gave obscured communication of needs and results. There should be direct line communication because research people lose contact with the practical forester. An example of this in recent years was a research person who received a large government grant for field research. In our discussions with him we indicated that much of his proposed work was already in the literature (a fact of which he was unaware) and suggested he contact local rangers and others on the forest for their more current problems in his field. He and his staff laughed hilariously at such an impractical suggestion.

On the other hand, in the education of future practicing foresters, more emphasis should be placed on training in sources of information and the process of applying research results to the actual situation. At the same time, employers of practical foresters — government and industry — must be made to recognize that keeping up-to-date through meetings, study, and contacts is part of the job. However, just as a doctor, lawyer, or any professional person, the practicing forester has got to be prepared to do some thinking and studying on his own time. Furthermore, it takes only some thought, effort, a few 15¢ stamps and phone calls to government and university research agencies to communicate problems. The answers may not come immediately, but with more pressure, research organizations will respond, providing practicing foresters take the time to know what information they really need — and let others know they need it.

The easiest thing to do is put the blame on the other guy. There's plenty for both sides!

Clifford E. Ahlgren 1948

New technology made public

Again I have to be on the negative side. This important function is not receiving the attention it merits. I do not fault research alone for this. All foresters are involved; research, university, Society of American Foresters, employer, and last but certainly not least, the forester employee. What I am suggesting is more continuing education, discussions, demonstrations, and actual field trials of research recommendations.

Sigurd J. Dolgaard 1936

3) What are some of the major forestry research needs from your point of view?

This was the most diversely answered question. Some of the more commonly mentioned research needs closed in on the scopes of the small landowner, reforestation of tropical hardwoods, study of the relationship between wildlife and silvicultural practices, acid rain, energy potential of forest lands, and focused on the betterment of communication as the main need.

. . . Management of pine on the basis of height rather than age class. In other words, harvest pine before it blows down.

Robert V. St. Amant 1932

Forestry research needs have been well documented for each of the major regions of the United States in the reports published as part of the National and Regional Forestry Research Planning Program. Personally, I feel that one of our major forestry research needs here in the Northeast is to develop more and better means for using the low quality wood and inferior species currently being grown on the Region's Commercial forest lands. Unless such material can be marketed economically, private landowners who control most of our commercial forest area are unlikely to improve appreciably their forestry practices. Another basic need, I might add, is for policy research such as will help to bring about more equitable taxation of forest land which is dedicated to forest production.

Charles C. Larson 1940

Foresters were one of the early groups concerned over the environment. I wish we had more influence in shaping land use policies. How do we do this? I don't know except through more active public relations programs. Field tours of well managed forest areas are, I believe, one of the best ways to show what can be or should be done to provide the many uses which are available through a well balanced forestry program.

This doesn't answer your question but my thinking is that research should be directed at showing the potential of our forests.

George B. Amidm 1936

One of the major forestry needs I see is that of private non-industrial forest management. The private sector of forestry has long been ignored, but with greater demand on our forest lands the private sector can no longer be overlooked. The demand for fuelwood has also made many woodland owners more interested in the management of their land. Owners want to know where to go for help, what it will cost, what they can do, what they can expect etc. These questions and others must be researched and presented to the public in a clear and accessible form.

Another forestry research need, which I already mentioned, is that of the field forester's needs. What information does the forester need more of? Which texts should be available? What information needs revision? What new tools of forestry are available? Who can answer a field forester's questions? The needs are always increasing, always changing. The "generals" should find out what's going on on the "front lines".

Sue Madson Brokl 1979

Some of the most urgent research needs are not in the biological realm, but in the economic and political realm. The nation does not have a coherent forest policy with respect to its public commercial forests. In a world of declining resources, the nations public forests are not getting the attention they warrant as sources of a valuable renewable resource. The management regimes on much of public sector lands are wholly unacceptable in the light of potential yields that could be achieved. Also, the use of wood as bio-mass for energy purposes is not receiving adequate attention. And the whole question of timber and timber land taxes needs review.

Vincent W. Bousquet 1937

I'd like to see research efforts strongly directed toward the utilization of products now being wasted. As I fly over the western states the grey plumes representing programs of "controlled burns" and "smoke management" appear as grasping remnants of the cut and burn philosophy of the past. If the waste of the past did, in fact play a role in building this great country, perhaps the thrift of the future will maintain it.

And yes, I believe there is a gap between the forestry related research and operational programs. I hold little hope for the chasm to narrow until there are good reasons for that to occur — usually funding. Funding levels and appropriations, reflecting policy firmly committed to progress in the wood products and field forestry programs, would provide improved direction to the objectives and goals of basic and applied research.

Gerald W. Zamber 1962

As energy needs become more critical the destructive cutting of trees for fuel wood in semi-desert areas in the Southwest is ever increasing. Research and extension activities need to be strengthened in "woodyard management".

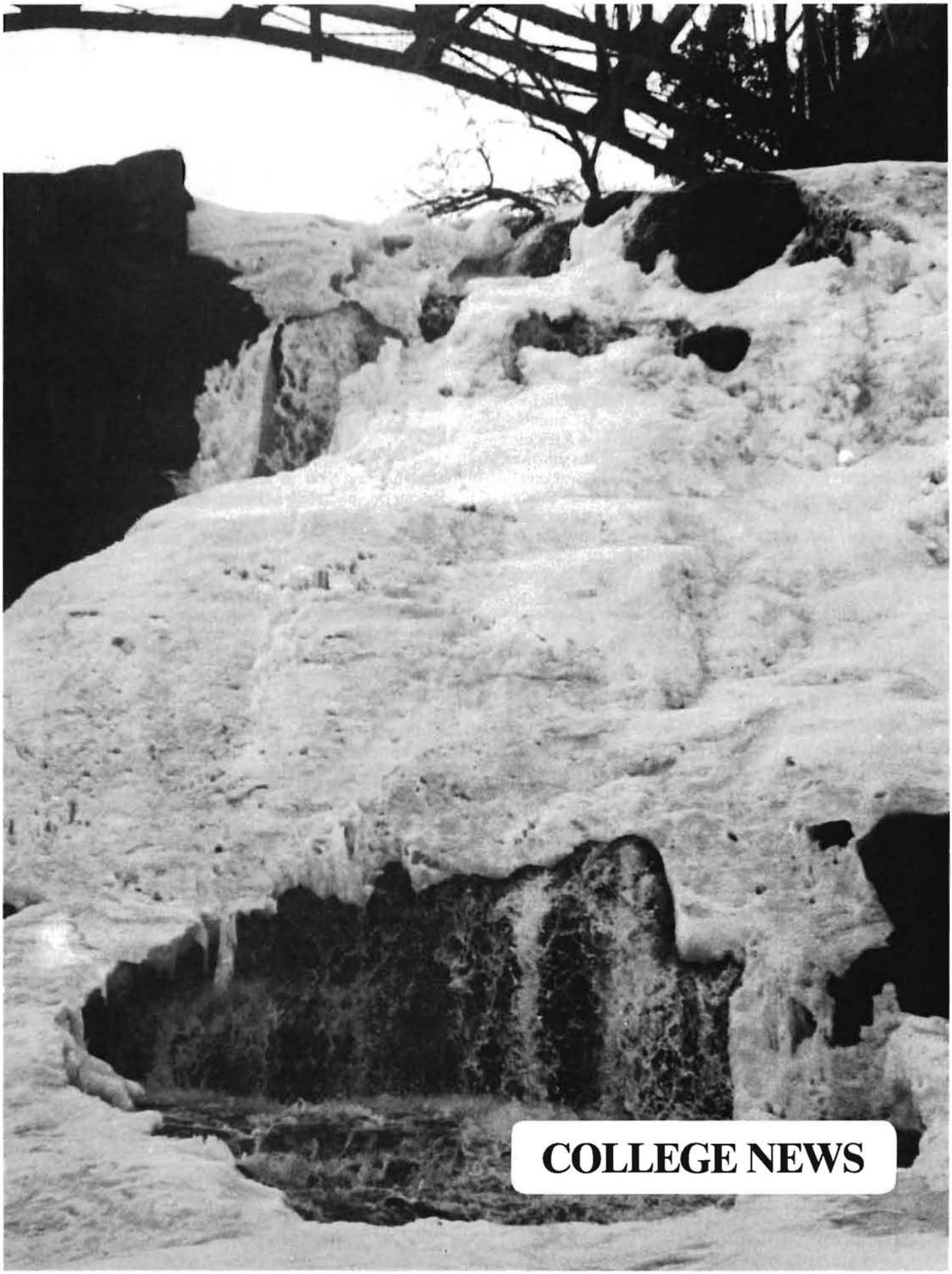
Donald M. Stewart 1931

Major research needs could include efforts to expedite the implementation of tree improvement accomplishments into field application. Also nursery techniques to maximize the utilization of superior seed from seed orchards or from natural superior sources.

M.J. "Mike" Latimer 1941

With the pressure of increased future demands, largely in the field of energy, a pressing need is for improved methods of restoring forest land to maximum long-range production. This will take a great deal of good, applied research in silviculture and the incorporation of old, already completed research results into practical methodology.

Clifford E. Ahlgren 1948



COLLEGE NEWS

College of Forestry
Finishing the 1970's Anticipating the 1980's

by Richard Skok
Dean, College of Forestry

This past year has been an extremely busy one for forestry in Minnesota and the College as well. We developed a draft set of goals and objectives for the College for the next 5 years as part of a University-wide long-range planning effort. We have worked hard to promote federal funding for the Renewable Resources Extension Act of 1978. The Green Hall addition and remodeling working drawing funds are being actively pursued with the 1980 Minnesota Legislature. Our alumni and outside support groups have joined with our students and faculty in pursuit of this elusive but sorely needed facility.

The College hosted the annual meeting of the McIntire-Stennis Cooperative Forestry Research Advisory Committee, chaired at the time by Assistant Secretary of Agriculture Rupert Cutler, in May of 1979. We joined with the North Central Forest Experiment Station, U.S. Forest Service, in co-hosting the Research Management Study Group of the International Union of Forestry Research Organizations for a study-tour of Lake States forest research facilities. We also were privileged to host the Board of Regents when they met on the St. Paul Campus last November.

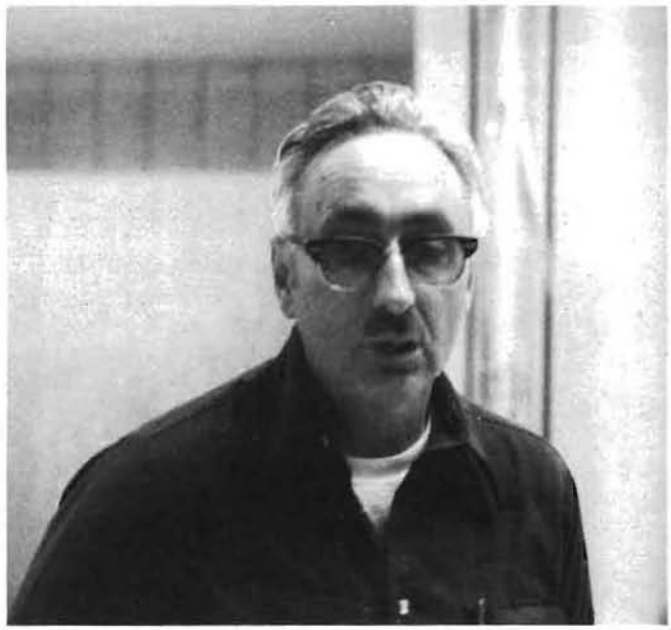
Visitors to the College this past year included Senator Rudy Boschwitz; Congressman Bruce Vento; Max Petersen, chief, U.S. Forest Service; and Stephen Spurr, a former faculty member of the College, past president of the University of Texas, and current president of the Society of American Foresters.

Our undergraduate enrollment of 355 in fall quarter 1979 compared to 440 in 1978 represented another significant decline. The drop in the total number of students since 1975, when we had a peak enrollment of 580, has been dramatic. All the reduction has been in the Forest Resources and Forest Science curriculums, probably reflecting the new and tougher math requirements implemented in 1976 and the realities of the employment and salary situation. Forest Products undergraduate enrollment is at its highest level and job opportunities have been excellent in this field in recent years.

Our graduate student registered enrollment continues to grow with a new peak this fall of 87 students including 29 in the Ph.D. program. The subfield of forest hydrology is attracting many students. Because of limited faculty and facilities we are not able to accept many of the highly qualified student applicants in this field.

We believe we have experienced most of the downward trend in our enrollment and expect to see our undergraduate numbers stabilize somewhere between 320-360 for the next five years. However, past experience suggests that no one has a very clear crystal ball for predicting enrollment.

John Haygreen has been on a sabbatical leave at Auburn University since August 1979. In his absence, Rolly Gertjejansen has admirably filled the leadership and administrative role of acting head of the Department of Forest Products. Greg Brown, looking for new challenges after his first year as head of the Department of Forest Resources, accepted a 3-year appointment as editor for *Forest Science*.



Dean Skok

Scott Reed joined the faculty of the Department of Forest Resources in November 1979 as an instructor and extension forester. One-half of Scott's time is spent in extension activities, and the balance is evenly split between teaching and research. With strong academic credentials from Michigan State and several years of employment with Potlatch Corporation, he brings some needed harvesting and industrial forestry experience to the college.

Ed Sucoff spent 11 weeks in Indonesia this winter as a research adviser to forestry schools there. His trip was sponsored by AID. Ken Brooks spent several weeks in Morocco reviewing and evaluating the watershed and range program needs in the AID-funded effort to strengthen the graduate education and research capabilities of the College of Agriculture in Rabat. The College has been participating in this project for over two years. Ken also spent three weeks in November in the Philippines providing instruction in watershed management to a group of Southeast Asia foresters under a program funded by Man and the Biosphere.

Several of our faculty have been actively recruited by other institutions or agencies during the past year. While, to date, we have been successful in retaining these staff by responding positively to the competition, I am concerned about the future. Capable faculty can be kept at Minnesota only if we can provide them the kind of environment and opportunities that motivate highly talented people.

Merle Meyer has served as director of the Remote Sensing Laboratory of the Institute of Agriculture, Forestry, and Home Economics since its formation in 1972. Merle asked to be relieved of this administrative task a year ago. The directorship of the Remote Sensing Lab, operated by faculty and staff of the College of Forestry, was assumed by Tom Lillesand on July 1. Tom will continue the strong leadership and representation of the Lab that has characterized Merle's tenure.

With the passing of Professor J.H. "Pop" Allison at age 96, we lost another of those faculty stalwarts who, over the years, stamped "forester from Minnesota" on so many of us. Brownie is now the senior living faculty member. His health is not good, and he is in a nursing home because of the need for constant care.

Frank Kaufert shares part of nearly every working day with us and continues to contribute to the College in many ways. Frank and Ione spent several weeks in Florida this past winter but returned with the robins.

In closing, let me indicate one chapter of the past that is reopening for us. With the development of warmer relations with the People's Republic of China, several Chinese forestry graduates with advanced degrees from Minnesota have reestablished contact with us. Among these are:

Professor Ying-Chen Li
Si-chuan Forestry Research Institute
Ph.D. 1937 76 years

Professor Wen-Yue Hsiung
Nanking College of Forest Products
Ph.D. 1951

President T.P. Ma
Nanking Technological College of Forest Products
M.S. 1937

Professor Hsuing will be visiting the College in April for two weeks.

Despite nearly 30 years without contact with the College, these graduates remember with deep respect and affection their time and professional associations at Minniesota. From Professor Li's letter of reintroduction to Mr. Dean, College of Forestry. I wish to share with you his sentiments:

> It is more than forty years, but I still remember some of the professors and good times when I was in the Twin Cities . . . We (Dr. Schantz-Hansen and Professor Cheyney) kept correspondence since I came back to China from 1938 to 1950. Our correspondence stopped about 30 years ago but the friendship is still everlasting. This is the reason why I wrote this letter and asked so many things about all I remember in my mother school.

We plan to be a part of the new U.S.-China forestry program for professionals. Hopefully, 30 years from now there will be foresters in China, as well as elsewhere, with this same strong feeling for Minnesota, its people, and its College of Forestry.

"Capable faculty can be kept at Minnesota only if we can provide the kind of environment and opportunities that motivate highly talented people"

Cloquet Forestry Center College of Forestry Field Day

Cloquet Forestry College College of Forestry Field Day

by Al Hallgren
Director, Cloquet Center

The College of Forestry conducted a field day for the public at the Cloquet Forestry Center on August 9, 1979. The purpose was to acquaint the public with the programs and activities of not only the Cloquet center but of the College as a whole. All the units of the College as well as supporting units from entomology, pathology, and wildlife presented displays and demonstrations in the Classroom Building and in the garage area. Wagon tours through the forest with stops at five points of interest were available to the visitors.

A cookout was held at the Center the night before for all the participants. This provided a not too common opportunity these days for College personnel to visit and get to know each other better.

The field day was a great success with over 200 people registering for the event. The heavy rain in the morning dampened the ground but not the enthusiasm of the exhibitors or the visitors. The field day perhaps provided the College itself as much an opportunity to get to know itself better as it did the general public. The post field day evaluation produced a very strong consensus that these field days should be continued — perhaps not every year but on a regular basis. Hope you can be with us for the next one. We will keep you informed about the date.

Department of Forest Products

Developing For The 1980's

by Roland Gertjejansen
acting department head, FP

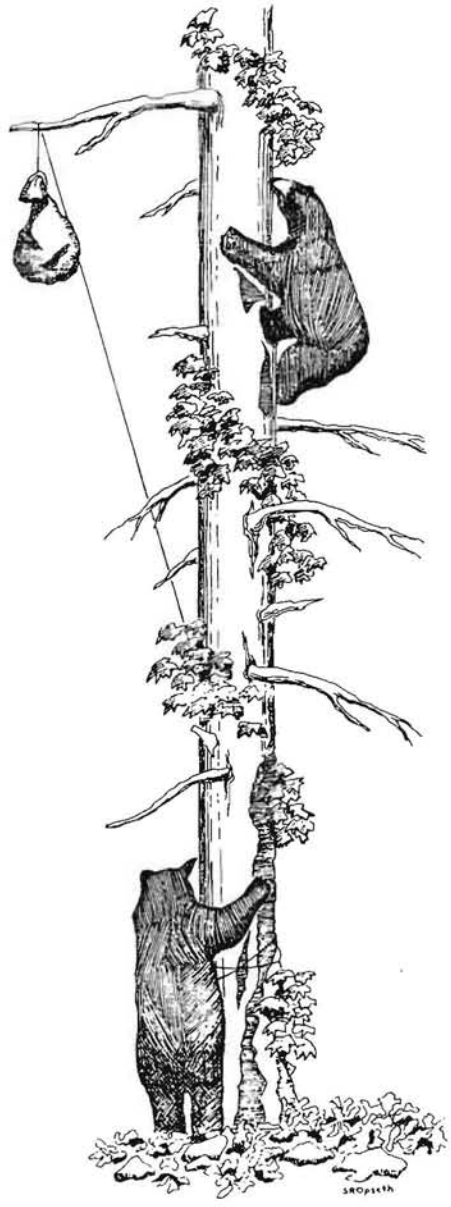
The 1979-80 academic year has been an interesting and challenging year for the Department of Forest Products. All three major components of our operation — research, teaching, and extension — have been active and undergone changes, and I would like to share these activities and changes with you at this time.

The extension program in the department has increased greatly over the past several years. Our extension specialists have instituted new programs and stepped up their activities in existing program areas in response to public need and demand. The Kiln Drying Short Course is only two years old but has proven to be an overwhelming success with the industry. In addition, the Lumbermen's Short Course and the Hardwood Lumber Grading and Softwood Lumber Grading Short Courses continue to attract attendees in large numbers as do the sawmill operator's and the wood finishing clinics. Wood for home heating, consumer use of wood and wood products in housing, the utilization of Dutch elm disease killed timber, and the ice dam problem on homes were major public concerns that were addressed by the extension specialists this past year. Looking ahead, 1980-81 will be another busy year for extension particularly in light of the increased emphasis on home heating with wood and the development of energy efficient homes.

The teaching program in the department has grown over the past several years to the point where we now have approximately 90 undergraduates enrolled in the Forest Products curriculum and 25 graduate students involved in various areas of research. Employment opportunities continue to be excellent with each graduating senior averaging 2-3 employment offers. We did not add any new courses to our offering this past year and in fact actually reduced the number by consolidating four courses into two. This was necessary because of faculty commitments in other areas, and after careful study we assured ourselves that the consolidations would have no adverse effect on our overall teaching program. We are extremely pleased with our growth in enrollment, and we look forward to an even greater involvement as the demand for our graduates continues to increase.

The research program underwent the greatest change this past year in that both our research budget and staff increased significantly. The budget increase was primarily the result of grant monies generated by several faculty members, and we see even more of this in the years ahead. An increase in grant money necessitated an increase in staff to effectively carry out the research for which the grants were made. For that reason two new Research Specialists and one Research Associate have been added to our staff, and some of the increase in graduate student numbers reflect the increased need for research staffing in several areas. Broadly stated, our current research projects deal with the interaction of solvent systems with wood, the utilization of Lake States hardwoods for structural panels, the development of new and improved manufacturing processes, identification and development of the highest value uses for the total tree biomass, automated and continuously changing kiln schedules for hardwood lumber drying, and the effect of metal ions on monomolecular films at the air-water and cellulose-water interfaces.

The years ahead will be marked by an increased emphasis on research to better utilize low grade and dense hardwoods and residues for forest products. We have research projects already underway in this important area but see a significant increase in our involvement because of grant money that will be designated specifically for this research. Both basic and applied studies will be necessary if the program is to be successful, and for that reason we intend to continue with both types of projects and develop new ones as the need arises.



Department of Forest Resources

Moving into the 1980's

by Gregory Brown
Department Head, FR

The Department of Forest Resources in the 1980's will continue to maintain dynamic programs in teaching, research and extension. Curricula in both Forest Resources and Forest Science will adapt to professional needs in meeting challenges of our modern society and its demands on our forest resources. Curricula will continue to integrate the multiple forest resources in presenting management skills. Forest resources management decision making also will receive increasing attention since this characteristic is required of the professional forester. New specialized areas which likely will receive attention in Departmental curricula during the 1980's include industrial forestry and harvesting, urban forestry, and hardwood silviculture and management. The curricula will be revised and updated as required to adjust to professional demands of forest resources management.

As women have moved into the profession of forestry during the 1970's, the 1980's likely will see the presence of women faculty members in the Department of Forest Resources. Adding this new dimension to the Department will expand the horizons of forestry education and the profession.

Approximately 73 percent of the annual budget of the Department of Forest Resources is in support of research activities, and about 43 percent of this research support comes from research contracts with agencies external to the University of Minnesota. The Department attempts to maintain a balance between basic and applied research, and will continue to examine this balance as research needs are identified in the 1980's. The Department has maintained for many years a reputation for diversity in its research activities, with excellence in several disciplines. Dissemination of research information will continue through multiple outlets including popular journals, technical reports, professional and scientific journals, and speeches delivered to various professional and scientific groups.

The Department of Forest Resources' research programs will continue to address primary needs of Minnesota and the Lake States region, but also will address many national and international problems. Many areas of forest resources research currently are represented, and many have received increasing attention during the late 1970's and will continue to do so during the upcoming decade. Major efforts are underway with intensive management of our forests through regeneration with containerized seedlings and selected cuttings, growth promotion with fertilizer regimes, tree selection and breeding, and quantitative aspects of growth and yield and branch architecture. Wood for energy relative to supply, production and harvesting also is a focal point of current research. Development of new methodology for more rapid forest inventory will contribute to these needs. Expanding programs in forest hydrology directed toward water quality and sedimentation from harvested forest lands are addressing a major resource concern in Minnesota. Research with the State's large acreage of peatlands includes forest reclamation and water quality. Another research effort is directed toward the agricultural community through shelterbelt management and soil erosion control under center pivot irrigation systems. Land management economics through benefit-cost analysis, land-use decision making, alternative management plans for county lands, and government incentive programs for private land owners will continue to receive major research attention. Consistent with Minnesota's expanding utilization of the forest resource for recreational activities, research will continue in the area of seasonal forest recreational opportunities. Contributing to many areas of forest management, a major research effort will be continued in remote sensing and aerial photography.

New areas of research likely to be introduced during the 1980's in the Department of Forest Resources include programs directed toward industrial forest management problems, toward harvesting operations under intensive management-high yield systems and to provide wood for energy, toward urban forestry problems, and toward hardwood management. Ongoing research in remote sensing relative to land classification and resource analyses likely will see innovative approaches used through satellite systems and computerized scanning systems. The problems of acid precipitation currently receiving much attention in northeastern United States and southeastern Canada will receive research emphasis in the Department of Forest Resources. The entire energy issue which the world faces today also will be addressed in the Department through research toward wood for energy in multiple systems.

"Growth and changes in the curricula . . . will be dependent upon increased funding, facilities and faculties"

The growth and changes in the curricula, research programs, and extension programs of the Department of Forest Resources will be dependent upon increased funding, facilities and faculties during the 1980's. Exciting forestry issues exist in Minnesota today. New forest industries, wood for energy, intensive forest management stimulated by BWCA legislation, and prospective renewable resources extension funding are among these issues. The decade of the 1980's already promises to be quite exciting for the profession, and the Department of Forest Resources will continue to stay on top of new developments.

Recreation Resource Management Program

Changing Decades/Changing Program

by Lawrence Merriam
Coordinator, RRM

The Recreation Resource Management (RRM) program emphasizes allocation, management and land use planning for recreational opportunities. Departing considerably from the forest resources core, a major objective is to help students understand both human needs and resource capabilities; therefore, the curriculum attempts to strike a balance between the social, biological and the physical sciences. Although less attention is directed toward the more pragmatic aspects of management techniques and site administration, graduates should have the conceptual base upon which to build a career in a variety of fields. Students interested in advanced work may continue in forestry graduate programs where one research component is concerned with recreationist behavior and use, as well as management of parks, forest and wilderness.

The Recreation Resources Management (RRM) program was instituted in the old College of Agriculture, Forestry and Home Economics (now Institute) in 1967 as an interdisciplinary sub-program in the College's Resource and Community Development (RCD) program. In addition to RRM, Resource and Community Development included soil and water conservation, resource economics and landscape design (now Landscape Architecture).

The RRM subcommittee of RCD has administered the curriculum and has representation from Forestry, Horticulture, Agricultural Economics, Entomology, Fisheries and Wildlife, North Central Forest Experiment Station, the Department of Recreation, Park and Leisure Studies (College of Education) and the RRM students. Since the curriculum's inception, most of the advising has been done in the College of Forestry, and there have been advisors assigned in the Departments of Entomology, Fisheries and Wildlife and Horticulture to advise those students registered in the College of Agriculture.

Beginning in 1977, program administration was transferred to the College of Forestry with a continuation of the inter-disciplinary advisory committee. All advising and related matters are now performed in Forestry.

The curriculum does not include field sessions, although some students have elected to go to the Itasca session. Participants are encourage to do professionally related field work and many cooperative arrangements have been made for student work with Hennepin County Park Reserve District, Minnesota Department of Natural Resources, U.S. Forest Service, Corps of Engineers-U.S. Army, among others. A key feature of the program is the three quarter series seminar project which integrates students from all the RCD curricula into a planning-resource evaluation study. Over the years, planning studies have been done of Minnesota counties surrounding the Twin Cities Metropolitan area, as well as the St. Croix River Scenic and Recreational River Area. Reports of the studies have been well received in planning and administration circles.

A very effective liaison has been established between the RRM program and the Division of Recreation, Park and Leisure Studies in the College of Education. The administrators of both programs recognize that each student has a unique set of needs and interests which are often best met by combining courses from the two curricula. Thus, there is a ready exchange of students and faculty between the two areas and the two RRM faculty members in Forestry have graduate program adjunct appointments in the Division of Recreation, Park and Leisure Studies. To a limited degree, there is interchange with the program in Landscape Architecture. Some students following the RRM curriculum desire a better understanding of design principles obtained by enrolling in L.A. courses. One course, required of both RRM and L.A. (recreation design option) students is taught jointly by instructors from the two programs.

Student numbers have stabilized over the years and there have been approximately 77 graduates since 1967. The program has increased visibility, both to potential students and to potential employers. Graduates of the program are working with the private sector and several levels of government on recreation resource planning and management (e.g., the Bureau of Land Management, Corps of Engineers, the Minnesota Department of Natural Resources, Hennepin County Park Reserve District, the City of St. Paul). The effectiveness of this type of preparation is evidenced by the rapidity with which graduates have moved into positions of major responsibility.

The program has attracted students as freshmen and as transfers from other institutions and other parts of the University, e.g., Forest Resources, College of Liberal Arts, Institute of Technology. There also have been substantial number of students in the program who have obtained previous degrees in other fields, such as Wildlife Management, Forestry and Business. There is both an active student RRM Club and an alumni organization maintaining communication with graduates.

Although there is no formal RRM graduate degree, post-graduate students can be and have been accommodated in the College of Forestry's graduate program with an emphasis on recreation resource management.

Recreation research is done by the two Forestry faculty members (Dr. T.B. Knopp and the author) responsible for the RRM program and graduate students in the College. Work presently includes studies of recreation behavior and perception of Minnesota land use management issues; the Minnesota River Valley Wildlife Refuge and Recreation Area; cross-country skiers in Minnesota; and, resource management in Voyageurs National Park.

In its 13 years of existence, the Recreation Resource Management program has demonstrated a capability to provide for the needs of its students and the changing demands of society.

STUDENT ACTIVITIES

Impressions from the Headwaters

by John Goad

The forest of Itasca is perhaps best exemplified by that silvical symbol of our state, the red pine. Tall, lean, stately, and perhaps even wise, these old lords of the woods stand with infinite patience and watch the comings and goings of countless scurrying humans. The pines have seen all the students from all the Itasca sessions, and certainly Itasca '79 would seem no different than any one of the three week sojourns spent at the headwaters. The growth rings added in 1979 will look no different than the other 300 — odd rings that each tree marks the passing of time with. The trees must know that every year they will re-witness the work, play, frustrations, and victories that are the fundamental elements of Itasca.

The red pines have seen us ankle deep in rain-filled soil pits, fingering clods of earth and wondering at the complexity of such a basic substance. They have watched us take their measure with glass and metal toys with which we seek to define their strength and power so that we may begin to understand some small facet of life's mystery. They realize that the wild times spent at the Northway did more than relieve the tension and monotomy of two a.m. study sessions, that they established a fellowship and camaraderie just as valuable as the studies that we undertook.

These trees have seen the pranks and hijinks which are so much a part of Itasca. The water buckets cunningly placed for the unwary, the raided cabins, the salted beds, the "honeyed" toilets, the creation of new species (Pinus mattressii), the volleyball and softball games, the guitar and coffee sessions; all blend softly into the memory like leaves settling gently onto the forest floor.

The pines have watched the long solitary walks by students seeking answers to questions as yet only guessed at. Questions upon which the fate of countless generations of trees may well depend. They have seen our struggle for knowledge and perhaps liken it to their own struggle for light and life.

The forester and the trees. One provides for the other. Separate forms of the same life force that binds together all living things into a community of being. More than anything, Itasca is a gateway to yet another gateway. And so goes life.

Coming soon . . . the Bionic Forester

Cloquet: A Wonderful Experience

by John Sloan

As the last car bound for home sped south through the majestic red pines along County Road Five, the experiences of the fall Cloquet field session settled into the memories of thirty six enlightened forestry students. It had been a mere ten weeks ago that these many individuals had come together to form a apprehensive yet eager group. What follows is the Cloquet account, the names have not been changed to protect the innocent.

Word spread fast during the first couple of days — one had better act specially friendly toward ones roomates or else one could wind up as an elected cabin representative. Nevertheless, seven people were chosen within the initial week, one from each housing unit. This delegation met for twenty minutes every other Monday if some of the members felt like showing up. Prominent issues addressed included: fresh fruit, the weather, paper towels, coffee, and rubber gloves.

Merle Meyer introduced each crew to the Cloquet session by sending them directly in the swamps and marshes in search of aerial photo interpretation. Mickey Kunne and Keith Jacobsen confirmed reports that the foot bridge over Otter Creek in section 30 was still intact although its value was questioned after they were forced to dogpaddle to and from the wooden structure. Photo class provided invaluable experience in remembering ones pace count amidst such adversities as hazel, alder, heat, cold, wet, misdirection, wondering whats for supper, and a gabby crew partner. Professionalism was the general rule, although few could contain a squeal of delight when first sighting the eighth wonder of the world, a forty corner post.

"Who needs a Relaskop, I've got my trusty Bic"

Meals were generally very good during the session. The first week's food was prepared and trucked in by a Duluth catering service while workmen finished kitchen renovation in the mess hall. This food was adequate, although not always on time. The important thing was that mass quantities were provided and we were given a weeks reprieve before kitchen chores began. On the second Monday, everyone was introduced to the dish washing rotation and to the food we would enjoy or put up with the next nine weeks. A popular phrase around the mess hall was, "What is it?" We were encouraged to eat below par meals or face the ghostly resurrection of leftovers on Fridays. A single kettle of tuna soup haunted the mess hall for a long time.

In the field of wildlife management, Gordy Gullion gave the class a true perspective of North America's most valuable tree species and the eighth wonder of the world, aspen. In addition, Gordy opened our eyes to the whos, whens, wheres, and whys of the revered ruffed grouse. He even offered cash for road kills, bird tags, tag sightings, predator kills, and new drumming logs. Those students proficient in math quickly calculated that one could earn four easy dollars by following five easy steps: 1) Catch, run over, or shoot a tagged grouse, 2) report the tag colors (collect $1), 3) turn in the tail feathers (collect $1), 4) feed the bird to a predator and turn in the remains (collect $1), 5) surrender the tags (collect the fourth dollar). Guest Peter Jordan exposed students to the notorious Moose Brain Worm Disease. Luckily, no confirmed cases developed within the class.

The comedy team of Dietmar and Alan spent a full week at Cloquet striving to interest students in the statistical aspects of forestry, Unfortunately, their converts numbered zero with a mean of 0.0, standard deviation of 0.0, standard error of .0063, and a 95% confidence interval of -.013 to +.013. Dr. Ek declared that the sampling procedure contained entirely too much bias to be valid while Dr. Rose pledged a better effort in the spring. Nevertheless, the dynamic duo managed to keep everyone busy and although many did not realize it at the time, they exposed us to the eighth wonder of the world, stratified double sampling with prior information.

Soon after the session began, a petition was circulated which called for the institution of a loggers workshop. The petition collected thirty five student signatures. Administrators were so overwhelmed by the 97% backing that Dr. Hallgren organized a set of workshops. This action so overwhelmed the students that only fifteen registered for the workshop. Participants were split into two groups, each working in the woods for a full day. Felling, limbing, chocking, skidding, bucking, sorting, and stocking were the featured experiences. Tom Nichols was hailed star of the show after scoring a direct hit on a U of M pickup truck with a tall jack pine. We noted the Tom's Timex kept on ticking.

Form the outset, Ed White expounded upon the care and feeding of the eighth wonder of the world, red pine. The advantages of thinning were preached daily and, like a catechism chant, often echoed through the compound. The numerous silviculture reports gave one and all good reason to cuddle up with pen, paper, and management guides on cold Cloquet evenings. In fact, reports that Dr. White would leave Cloquet caused stock in the Scripto Pen Company to drop by three points during October.

"Loggers workshop my _____!"

In between the classes, fieldwork, reports, and other work, time was found for sports and recreation. Dan Grindy and Mike Baker were threats in the third-down and long situations while John Kelly was tough in the offensive line. Dr. Ek and Dr. Rose felt at home on the volleyball court. "You got it Alan? . . . Yea Dietmar, I . . . no you'd better . . . oops." Attendance at volleyball games ranged from Mary Anderson playing alone to fifteen people on a side. Mark Weber and Terry Tucker dominated play on the ping pong table while Dr. White played occasionally. Dietmar Rose had fast tennies and Ed White had fast hands on the basketball court while Blaize Taylor gunned from the outside. Contrary to public opinion, Chuck Owens and Dot Peterson did not set up house in the pool room. Other pastimes included long walks in the woods for Jan Siebrass and Mark Waldoch. Several enjoyed the more strenuous activity of jogging, none more religiously than Bill Steigerwaldt and Jane Hess. After exercise, the melodies of Jeff Rosales and his guitar were common but welcome sounds.

Up the road about a mile from the center, "Ray and Mabels" was a popular spot to relax. The bowling alley drew a large crowd of students for Monday Night Football on the big screen. After a night at the bars, it was always fun to go back to the bunkhouse to whoop, slam doors, blow goose calls, set off smoke alarms and light fire crackers. Ah, good ol' dorm life.

Together, Al Hallgren and Dave Egan taught Harvesting and Engineering. The class, although quiet at times, generated great enthusiasum by providing a contest to see who could bitch, moan, and complain the longest and loudest about the pickiest details. Patriotic emotions were stirred when it was learned that forestry (due to Britain's lack of New England white pine ship masts) was the major reason for the outcome of the Revolutionary War. Road layouts were a high point in the course but the ultimate thrill was to see in action the eighth wonder of the world, a Drot Feller-Buncher.

One cannot reminisce about the fall Cloquet session without mentioning the field trip to the Pickwick Lounge in Virginia. Bill Steigerewaldt, a bit too close to the stage, was slapped in the face by a pair of unidentified bouncing objects. He spoke for most members of the group when he commented, "Thanks I needed that." Incidently, sidelights of the trip were visits with professional foresters from Superior National Forest, Minnesota State DNR, St. Louis County, and Potlatch Corporation,

Bruce Harding came out of his soil pits just long enough to teach one credit worth of "forst sols." Although Bruce listed nine factors which limit soil development, none of them were effective in limiting soils class. The ingenuity of the class members was observed when all eighteen crews managed to submit soil analysis reports without having soil analysis data. It was in Bruce's soil pit that the eighth wonder of the world, an Omega loamy sand, was unveiled to his thirty six pupils. The big clue was the "great A2."

Everyone received an easy seven credits in FR 5-225, Forest Resource Analysis, and got the chance to work like professionals. Had some of the groups been given the authority to carry out their plans, the Cloquet Forest might have been converted to number one grade pulp by the Taskatoo Paper Company, transformed into a recreational paradise by Forestry Consulters Inc., converted to total red pine by Pine Tree County, "started over for tomorrows generations" by Advanced Timber Corporation, and converted to grouse habitat by the Blue Ox State Forest. Meanwhile, the Minnesota National Forest would do its part by using up all the paper produced by Taskatoo and A.T.C. The formal presentations went well but the real fun came afterwards when the students got the chance to test just how well the faculty could ask questions. Dr. Irving, Dr. Alm, Dr. Brown, and Dr. Hallgren all passed but Ray Jenson received the gold star.

The Cloquet Field session of fall 1979 was a valuable experience not only for the knowledge gained in forestry, but also for the many friendships made or strengthened. The faculty cared about the students and generally showed it. In addition, the setting of the beautiful Cloquet Forest made us feel closer to the career we all have chosen. It was heaven compared to reading textbooks back in St. Paul. Cloquet was a wonderful experience.

There's a pair of suspicious grins

Wood Industry Tours, 1979
or
If it's Wednesday This Must be Rhinelander

by Dave O'Brien

Spring break generally finds students going to many different places and doing many interesting things. Spring break 1979 found a group of Forest Products students planning just such a trip. Unfortunately they found they would have to cancel it when they discovered a slip of paper in their mailboxes saying Forest Products 3-300, Wood Industry Tours, would be offered spring break. This meant that instead of a brief sojourn away from the world of board feet, M.O.E.'s, and hammermills, they would spend the one week between winter and spring classes on a greyhound bus traveling through the north central United States, catching glimpses of what it's like to be grown up and employed in the Forest Products Industry.

Things got under way early Monday morning. A few students who had bad attitudes to begin with became even more suspect when the rumor circulated that the bus driver was the wife of our tour guide, Jim Bob Bowyer. Nevertheless, most of us settled back into our seats to comfortably undertake our two credit loss of spring break. As we pulled out onto Cleveland, anyone looking back at Kaufert Laboratory through the still dark, misty dawn would have been able to see Tom McMillan, late as usual, running wildly after the bus trying to attract attention. Of course no one did look back, and as we turned onto Larpenteur Avenue a few students sleepily chuckled to themselves that this was one class that Tom should have made on time.

Our first stop was a one and one half hour tour of the bus company's garage on the east side of St. Paul. It was determined here that the bus drive was not Jim Bowyer's wife. Somehow his choice of words and tone while muttering something about "the University's policy of accepting the lowest bid," convinced even the most suspicious among us. They ended up letting us keep our bus, with the stipulation that we could not turn the engine off.

The afternoon passed uneventfully with tours of the Rajala Timber Company and the Blandin Paper plant (we had decided to forego the Northern Timber Company in order to make time for the bus garage tour). At Blandin, we were ushered into one of their conference rooms where we were surprised to see Tom McMillan sitting behind the table. We postponed the plant tour long enough to say hello and listen to stories about how he had hitchhiked to Grand Rapids in half the time it took us on the bus.

That evening, after our tour guides had dropped us off at the $8.88/night motel and then we'd taken the bus across town to the Holiday Inn, we dined at the local fried chicken house. The rest of the evening was spent watching the Grand Rapids Bar Maids' pool tournament.

Tuesday we awoke early and headed for Duluth. Superwood gave our olfactories their first chance to get accustomed to a few of the exotic smells the industry offers its employees. The day sped along quickly with a lunch at

Hardee's and all the free matches you could cram in your pants (Raul won) at Diamond International Corporation in Cloquet. The Cloquet Forestry Center put us up for free that night. A few students braved the cold and hiked three miles out the road to have their own pool tournament at the Wilderness Bar and Grill.

Events of Wednesday and Thursday are more difficult to distinguish. Remembrances of plywood mills, Country Kitchens, cabinet and door manufacturers, Hardee's, and pallet plants all seem to blur together. Three images remain crystal clear in my mind, though. The first is the sight of Bob Govett traipsing up and down the aisle of the bus decked out in army fatigues and tour guide head gear. The second is the sound of Bob Govett's voice that endlessly harangued us with limericks, songs, obscenities, card game scores, jokes, and general anal prophesizing. He was always up long after most of us had gone to bed and yet somehow managed to wake up early every morning and tell us everything that had gone on the previous evening. The third image is a vision of Mike Rask and companion running through the backyards of Rhinelander being chased by a brigade of horned Hodags decked out in their uniform of sweatshirts and polyester slacks.

Friday, the final day of our trip, was anti-climactic. The students seemed to have fallen into an exhausted stupor, no doubt from four days of greasy food, too much alcohol, and the ever-present smell of formaldehyde. The last stop was the Cornell Corporation, where we stood outside in the rain and snow while the president of the company tried to find out if any of us knew his son who lived over at the Farmhouse Fraternity.

The great debate: when should we start break?

On the bustrip back to Kaufert Laboratory the conservation took a political turn. Topics of discussion ranged from national politics — whether snowmobiles and motor boats should be allowed in the BWCA, to Forest Products Department politics — whether this course would be graded A-N or S-N.

Upon returning to school, most students immediately went home planning to get the most out of the two remaining evenings of spring vacation. From reports the following Monday, it seems most decided to take a short nap Friday evening and didn't wake up until about noon on Sunday.

In retrospect, the general consensus was that the trip was worth while for the camaraderie that developed among the students and from the exposure to life in the Real World. It was also satisfying to know that next year, when Wood Industry Tours would again be offered, each of us could get on with the normal business of taking a spring break vacation away from the dear old College of Forestry.

Xi Sigma Pi

by Duncan Ferguson

1979-1980 Officers

Forester	Rene Needham
Associate Forester	Duncan Ferguson
Ranger	Susan Rutherford
Secretary-Fiscal Agent	Terry Cundy

The original chapter of the Society of Xi Sigma Pi was established in 1980 at the University of Washington. Initially the Society existed as a local honor fraternity. In 1915 a national constitution was adopted and other chapters were chartered. The fourth chapter chartered was Delta Chapter, here at the University of Minnesota in 1920. Each consecutively chartered chapter has been named based upon what position it corresponds to in the Greek Alphabet. Once the entire alphabet was exhausted, the naming of chapters began over with Alhpa Alpha, Alpha Beta, et cetera. Today there are numerous chapters at many forestry educational institutions all over the United States.

The objectives for which the society exists are to:

1. Secure and maintain a high standard of scholarship in forestry education.
2. Work for improvement of the forestry profession.
3. To promote fraternal spirit among those engaged in forestry activities.

The symbol of the fir tree on the emblem of the Society represents the study of forestry and the vigor and the youth of the profession. The two letters at the base of the emblem, Pi and Alpha, stand for the initials of Pallas Athene, the legendary goddess of wisdom and the patron of the arts and the industries. The three greek letters that comprise the name of the society represent the Greek symbols for eternal friendship, honor and earnest endeavor for Xi, Sigma and Pi, repsectively

The major activity of the Society at the University of Minneosta is the maintenance of a speakers bureau which is comprised of the members of the society at this chapter. Numerous public organizations, primarily schools, request career type presentations of the responsibilities and educational training of foresters. Not all of the presentations that are given are strictly career oriented, however. More frequently organizations are requesting informational presentations regarding tree planting, urban forestry and broader forestry related topics and issues. By these presentations the society is helping to provide the education of the general public regarding forestry that is widely acknowledged among professionals as a necessary key to public acceptance and support of good forest management practices. Traditionally, the largest number of requests made for speakers from the speakers bureau come in the

spring with career talks at high schools and tree planting informational presentations to local and civic organizations. One of the responsibilities of all members in the Delta Chapter is to avail themselves to these presentations when requests come in to the speaker's bureau chairperson.

The other major activity of the Society is the annual banquet and the initiation of new members. This year's Banquet was held on February 28, 1980. This year the Society was priviledged to have as the guest speaker, Mr. C. Robert Binger, President Natural Resources Division, Burlington Northern Railroad. Dinner entertainment was provided by one of the new initiates, John Sloan. This year 19 undergraduates, 15 graduate students and one member of the faculty were welcomed as new members of the Society. The officers salute the accomplishments of the new initiates and trust that their professional careers will have been augmented by their membership in the Society.

The Blandin Forester reveals tricks of the trade

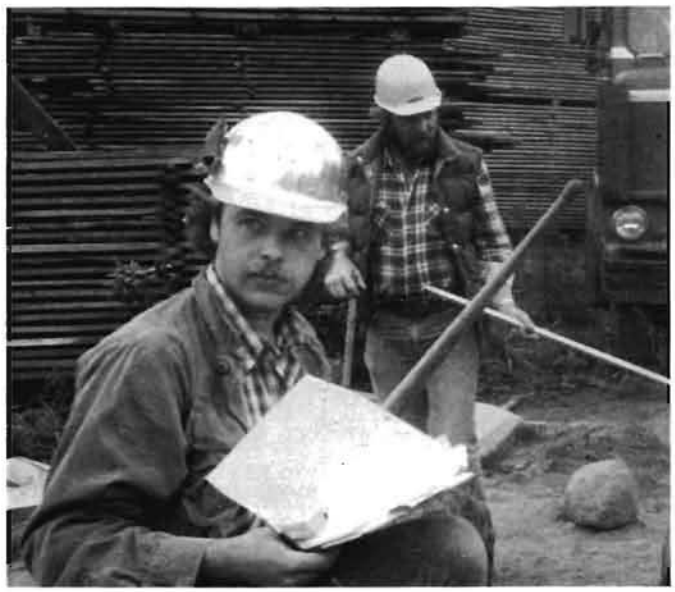
Peglegs, Sawdust, and Woodchips

Due to circumstances beyond control, the student newsletter made its first appearance in January. It sensational debut was acclaimed as the literary debacle of the decade. Bear in mind, however, that the decade was a scant two weeks old.

Woodchips is a student run newsletter that seeks to fill the void existing betwixt the ears of the average college student. And a vicious void it is, too: A cavernous maw that slavers after any mindtripper who dares quest through the attic space of your typical forester. It is with the intent of satiating this vociferous void that *Woodchips* provides information on upcoming College of Forestry events, functions of the various Forestry clubs and organizations, articles from such prominant sources as the Minnesota DNR and North Central Forest Experiment Station, jokes and tales, and an occasional bawdy picture when the censor is napping.

Now in its second year of publication, *Woodchips* would like to acknowledge its own long history by recalling some of the more famous stories that have graced its pages;

Actually the best stories never made it to the press as the Gopher Peavey's editors always managed to spirit them away for their own purposes. Well, let the Peavey take its ill-gotten gains and stumble its way into the annals of history. *Woodchips* is a publication of the here and now. So look for it now and then.



Paperwork begins in the field

Forest Products Club-Forest Products Research Society The '79-80 Experience

by Barb Peterson

Club Officers:	
President:	Barbara Peterson
Vice-President:	Dennis Fahey
	Robert Govett
Secretary-treasurer:	James Sandusky

FPC-FPRS had an active and profitable year while providing social as well as academic functions. During the 1979 spring quarter two new activities were sponsored in addition to the invasion of a Kick's game/tailgate party and participation in the Lumber Logger Softball Tourney. Early in May Dr. Robert Rice, a visiting scientist from the University of Massachusetts, inspired a fireside talk after a brat and beer picnic in Como Park. Later in the same month, the graduating seniors got their chance to get back at the faculty and students in the form of a roast. After a tantalizing turkey dinner, Master of Ceremonies, Dr. Robert Erickson, delivered and received caustic comments to and from students and faculty alike.

Barb gives 'em what for

Fall quarter membership rose again this year and new twists were added to the old traditions. The fall barbecue was a taco fiesta, and initiation required team competition in events such as lumber stacking, wood identification, wafer racing and a pulp toss (bleached aspen kraft at 1% consistency). The winning team recieved a year's membership in the Forest Products Research Society. Eleven club members were able to escape midterms and attend the Upper Mississippi Valley Section meeting of FPRS held in LaCrosse, Wisconsin. The trip provided an educational and inspirational break from the usual routine.

The third annual Christmas party was held traditionally on the last day of finals, and breaking tradition, required everyone to bring a tree decoration. Prizes were awarded in several categories; most original, most in keeping with the Christmas spirit, most obnoxious, and most in keeping with a forest products theme. How an aluminum beer can won the last category I'll never know.

Winter quarter activities included a small invasion of F-day activities, a made-it-through midterms potluck supper and party, election of new officers and participation at the Northwestern Lumberman's Association convention. Work on fund-raising projects was also accelerated during winter quarter as the second batch of wood ID kits neared completion. Although this is a relatively new project, revenues and response from the first set have indicated a great potential for this project. Wheel chock and name tag orders have also kept club members busy throughout the year.

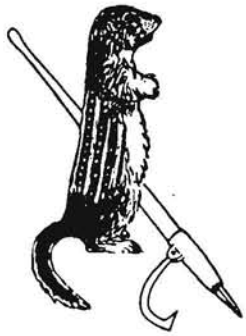
Forestry Club 1979-1980: Retrospecs

by Bob Leibfried

Forestry Club Executive Board

Advisor	Dr. Villis Kurmis
President	Bob Leibfried
Vice President	Dale Dose
Treasurer	Cheryl Gustafson
Secretary	Carol Buche
Historian	Liz Zutz
Sergeant at arms	Chuck Owens
Sergeant at arms	Como Pontliang
Sergeant at arms	Kate Turner

As usual this has been a very busy year for the Forestry Club. The fact that Minnesota hosted the Midwestern Forester's Conclave may have a lot to do with it, or then it may have to do with my perspective. I'm looking at this year through the eyes of an administrator (executive if you will) rather than through the eyes of a non-executive member. My duties were made much easier with the help of some very competent people. Without the support of enthusiastic members, F Club would not be as successful as it is. Any credit due to the club should be equally shared among the active members. It definitely was a group effort this year.



Rather than expounding on individual Forestry Club activities I'd like to share with you what I have come to realize about the club. Although I would have liked to remove "Forestry Club" from the English language at times I have come to realize the important, multifaceted role it plays in the College of Forestry. Is it a haven for undergrads with Napoleonic or Paul Bunyan complexes who wish to exercise their leadership and motivation? Yes, it is that. Is it a place to make friends and have some fun? Yes, it is that. Is it a time to get crazy and silly without worrying about what someone else thinks? Sure it is that too. But the F Club is also a key element in educating people about "real forestry". This is accomplished through its programs at each meeting, Foresters Day, the Christmas Tree project, management trips, and Conclave. The Forestry Club can reinforce basic skills like handling of money, responsibility and organization. It can also teach more specific skills and systems such as Christmas tree management, the workings of the forest industry and silvicultural practices. It is an opportunity to become more familiar with the staff and faculty here at Minnesota, most of whom are more than willing to help out.

RRM'ers insist it tastes like wild hickory nuts

So, in a nutshell, Forestry Club is what you make of it. Becoming a member doesn't automatically entitle you to all these benefits. A person can't pay their $1 dues and say, "OK, give me one of those packets marked "Leader". I'd like to be a leader. Oh yeah, and why don't you throw in a "motivation" packet too." It isn't that easy. Although all the ingredients are there, one very important component is missing: personal effort.

I realize a good number of alumni and faculty and non students are reading this and saying, 'Why is he telling us all this? We can't join the Forestry Club now." My reasons are twofold. First I hope some undergrads are reading this and will give F Club a try. Second it doesn't just apply to Forestry Club. What I have been saying is relevant to any organization. What a person puts into it will determine what they get back. Usually there are more benefits than costs.

It seems that the philosophical lecturer in me has crept into this article. Maybe it is a characteristic which is developed by all F Club presidents used to flapping their lips in front of the club for an hour every couple of weeks. Then again it could be a personal affinity for blabbing. I tend to agree with the latter.

My intentions in this article were not to dazzle you with any facts and figures of individual Forestry Club activities. Each project has been adequately written about elsewhere in the Peavey. I also did not expect to reveal any spectacular new developments as far as the F Club is concerned. It was my desire to put into words what many people, in their minds, know about the club but had never stated before. As in Hugh Prather's book, "Notes to Myself", I tried to state common knowledge which is lightly passed over until put into words.

The Story of R.R.M. Responsible Resource Manager

by Larry Killien

He looks like all other forestry students; he blends in well with his Big Mac flannel shirt, Osh Gosh Bgosh overalls and slightly used paratrooper boots. In this garb people don't recognize their hero but when duty calls he is there in a flash, giving the situation a lengthy once over and over again and zoom, he's up to the hill top to check aerial photos. In less than a millenia he is back with a completed Draft Environmental Impact Statement, a proposed General Management Plan, and the rental contracts for public input meetings at the town hall. Responsible Resource Manager is at the center of most debates; he always asks the right questions and never fails to have more than one correct answer! He is needed throughout the world but most of the so called professional people don't realize yet that they can't get along without R.R.M. Where, for example, would they get delightful terms such as carrying capacity, vegetative regeneration, D.E.I.S., and passive ecological degradation? R.R.M. is one of natures closest friends: He's strong, loyal, able to leap severely impacted areas in a single bound and yet still helps little old ladies carry their firewood across the street. Who could ask for more?

This has been a pretty good year for the R.R.M. Club. After a slow start during which we lost our president, Paul Weiland, and floundered a while, an illustrious new president, Bill Norman, picked up the pieces and put us back in shape. We have a highly variable volleyball team with a 67% win record as of this writing. We have a ski strip planned at Mardee's in Bruno, Mn. It should be just as crazy and eventful as last year's, provinging the snow holds up. The R.R.M. Club along with the Waksurs Outing Club, is planning another camping equipment swap. Hopefully it will be as successful as last years first attempt. We are also considering working on a project at the new Minnesota Zoological Garden. The club has been asked to plan the ski trails for their 400 plus acre area behind the exhibits. It will be good practical experience and should be enjoyable, too.

Attendance at club meetings has picked up and the future looks good. Now, if we only knew who that clown in the flannel shirt, bibs, and paratrooper boots was . . .

28th Annual Midwestern Foresters' Conclave

Hosts from time zero . . .
. . . winners in the last second

by Kelley Fleissner

This year Minnesota had the opportunity and challenge of hosting the 28th Annual Midwestern Foresters Conclave. The reason why hosting Conclave is an opportunity, is because this event brings together foresters from throughout the midwest to meet, compete, and celebrate with their future colleagues. Hosting Conclave is a challenge in two ways: organization, and competition. Hours of hard work preparing and practicing paid off as the entire weekend went without a hitch, and our Minnesota team captured first place and the Conclave trophy for the second time in the 28 years of the event.

Tom won this event, Hamm's down

Killer Kelley and his Ferric Fangs chew off another cookie

When lunch came, things were awfully quiet at Minnesota's tables. We had only 4 points on the scoreboard, while Missouri had already racked up 19 points. Just when people were beginning to talk about a Missouri run away, word came down from the field that Larry, Katie, and Russ had taken the first three places in dendrology! We had picked up 10 points and could catch Missouri with a big effort in the afternoon. The adrenalin was flowing, and momentum was on our side.

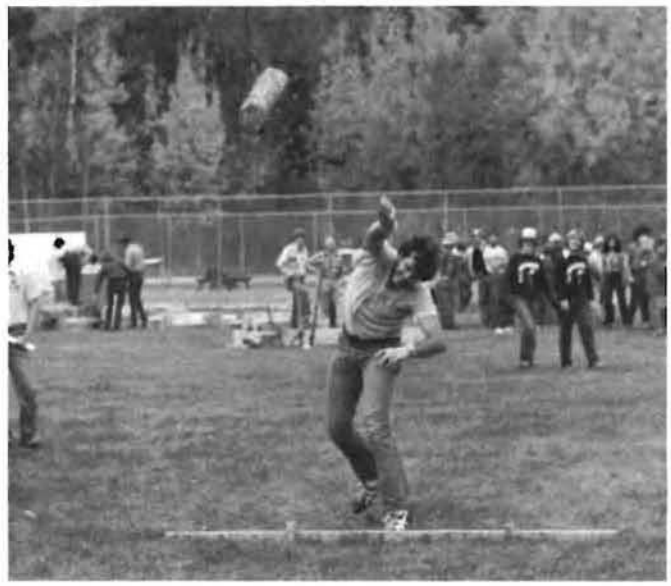
The outstanding performance by our two-lady bucksaw team of Sue Poche and Liz Zutz brought in a first place, 5 points, and set the pace for the rest of the afternoon. Third place finishes in the log roll, speed chop, bolt throw, and chain throw picked up valuable points and kept everyones eyes on the scoreboard. Another strong Minnesota pulp toss team of Wayne Herberg, Tom Searles, Mark Johnson, and Joe Zuzek captured first place, 5 points, and a tie with Missouri.

Never before has there been a closer more exciting Conclave. The last event, the two-man bucksaw, turned out to be a thriller. With Bob and Joe being the heavy favorites to win it, Minnesota was almost guaranteed the team title. Unfortunately Missouri didn't see it that way, and sawed the two fastest times up until Bob and Joe's. As expected, our dynamic duo proved the chain saw obsolete and sawed the fastest time of 20.4 seconds. Our 5 points for first, and Missouri's 5 points for second and third nearly left the Conclave in a position it had never been in before in its 28 year history — a tie for first. As we sat down and tried to figure out a tie-breaker, the saw team from Iowa State sawed away our problems by stealing second place from Missouri, and making Minnesota the champion of the 28th Annual Midwestern Foresters Conclave!

A special thanks should be given to co-captain John Stright for absorbing all the bad luck our Minnesota team had. John was disqualified from two of the events he participated in due to a broken axe in the speed chop, and illegal use of the leg in the log roll. J.B. was also placed in the "slow" heat of the special event, and failed to place. Our Minnesota team showed their appreciation for John's contribution by tossing him in the lake. Thanks John.

A lot of credit must be given to people who spent literally months planning and organizing the event. Co-chairpersons, Dale Dose and Chris Krantz, working together with committee chairman and the Camp Courage Staff, put together one of the best run and most enjoyable Conclaves remembered (according to the comments of visiting teams). Recognition should also be given to Cheryl Gustafson and Dot Peterson who did a fantastic job of finding all those prizes for the top competitors of each event.

The friday before Conclave turned out to be a curious day for us rookies. As the visiting teams arrived at Camp Courage some very strange last minute training methods were observed. Traverse competitorsled by our own Steve Mattson seemed to be stretching out their legs by swaying and staggering around camp. Those traverse people will do anything to get loosened up! The majority of the Conclave competitors changed to a diet consisting of mass quantities of liquids and junk food. I guess they did this to avoid dehydration during competition. Bob Leibfried, our



Brian attempts to launch a natural satellite

The woodchips fly and the crowd is going wild!

Spittin's easy; waitin's hard

Forestry Club president, insisted upon nocturnal calisthenics for the Minnesota team, which consisted of cant hauling, cutting, and stacking, nail pounding and hack-sawing, from 9:00 to 11:30 p.m. How did he get to be president anyway?

A much needed breakfast with lots of black coffee cleared the cob webs from the minds and mouths of the 200 or more foresters that would be competing that day. Last minute pep talks were given during the meal with emphasis on the fact that our only other win at Conclave was seven years ago, when Minnesota last hosted the event. The only problem with waking up that morning was dealing with the nervousness that raised havoc with the already queasy stomachs.

As the events got started, the magnitude of the Mid-western Foresters Conclave really hit home with us first timers. The excitement began with Bob's second place finish in the one-man buck-saw (Bob missed first place by .01 seconds).

The evening of celebration got started right after supper with the awards ceremony. Conclave co-chairpersons Chris Krantz and Dale Dose handed out the individual prizes, of which 13 different Minnesota team members received. With the announcement of the team prizes and Minnesota's first place, the 200 foresters crammed into the Camp Courage gym let loose with a booming standing ovation, as Missouri handed over the Conclave Team Trophy.

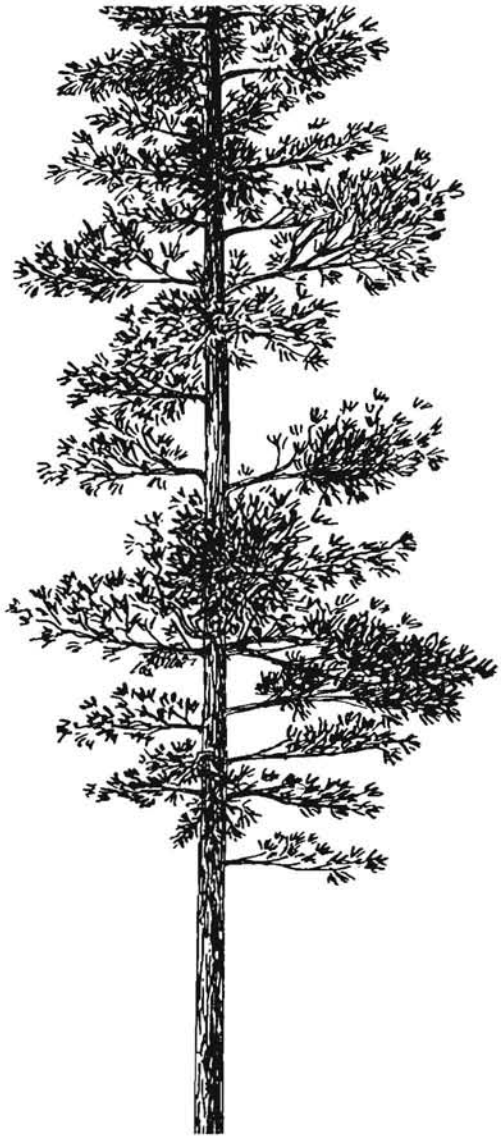
The traditional bonfire turned out to be a great end to a very exciting and successful day. With a short walk across a field, over the fence, down the hill, through the swamp, across the pasture, and over to the edge of the woods, we arrived at the site of the fire. The days events were relived and made into stories throughout the night. Our Minnesota team treated themselves to 'Forester's Bubbly', and I'm not really sure what happened after that. However, I did hear something about "Duke" being so excited about Conclave, he immediately began to train for next years competition — Duke was last seen trying to build his leg strength by hauling D.J. Bakken up and down a ladder. When asked why he would agree to be carried around on someones shoulder, D.J. could only reply "Ralph".

The 28th Annual Midwestern Foresters Conclave will long be remembered as a lot of fun, and a lot of work that paid off in a championship, and a heck of a good time.

Marko swears he prefers using a sight for target spittin'

Have a little pity, it's only wood

Waiting for the moon to show



A Reunion of Old Sloshy Soldiers

by Katie Jacobs,
assisted by Larry Himanga, Bill Dinesen, Mark Johnson and whoever else happened to be around

Pending financial strife, the Forestry Club started the wheels turning on the annual Christmas Tree sale, for the twenty-ninth time. Larry Himanga and myself were enlisted to purchase the trees, and Pete Willis, to sell them. Assisted by an occasional crew, we procured 2,960 trees. Tina Jaworski picked out no less than 26 of these. The first weekend in November found a herd of foresters assembled for the initial attack. Armed with their newly painted bright walleye green tree baler, and a few cans of Swiss-Miss, we headed north. Everyone worked ceaselessly for three weekends. The weekend before Thanksgiving, we packed our sleeping bags and spent a night in the north woods. Liz and Lisa (the singing cowgirls) filled us with fine food and spirits. On Sunday we brought the last load of trees to our lot on campus. Everyone got the holiday weekend off before the important business of selling began.

I have often wondered what it was that possessed me to volunteer for the strenuous job of putting together this tree operation. I was fully aware of the long hours, mental anguish and general grade point decline that are rumored to have plagued some of my predecessors. Despite these unattractive potentialities, I offered my services. Now that the job is finished and I've had time to ponder, I can see that the position has some important benefits. I would like to pass this wisdom to those of you who have never had such an enlightening experience.

1. If you want to sleep well, you should not leave 2960 Christmas Trees, for which you still owe $15,662.25, sitting at a busy intersection in a large city, with not one penny of insurance against fire, tornado, tent caterpillars, or theft.

2. Since you are not going to remember anything that someone tells you unless it is completely irrelevant, you should be in the habit of carrying a field book or secretary.
3. It takes a great deal of poise to keep from cracking up when someone tells you proudly that he's got hundreds of acres of red pine, and nothing else. May God spare him of an outbreak of canker.
4. Twelve ton trucks are much easier to drive if the emergency brake is not engaged.
5. 7:30 a.m. on a work day in St. Paul is not a good time to drive a twelve-ton truck for the first time in your life, especially if you generally drive a Vega.

If you've bothered to read this far, you are probably curious as to why this is entitled "A Reunion of Old Sloshy Soldiers", well, let me just say that it has something to do with old Christmas Tree devotees.

T'was The Night Before Finals

by Carl Vogt

T'was the night before finals and all through the college,
All the students were studying in their own Book of Knowledge.
A forester stood up with the name of Big Bob,
With a voice of authority said I have a big job.
It was time to select from the assembled few,
Three brave souls who would go out and work with the Christmas Tree Crew.
Their work would be easy and a piece of cake,
As long as they had only one course to take.
The Forestry Club members selected all three,
And hoped they would accept with great glee.
From the ranks of the sturdy came Peter and Katie,
Someone said we need somebody who won't tarry,
so a third was selected by the name of Larry.
In the heat of the summer and a job that's a bummer,
the trees were selected and down payments collected.
The growers all smiled when the club said remember,
we will be in your fields to cut trees in November.
With luck and good weather the tree cuts arrived,
And so did Scotty with his big four-wheel drive.
The students were armed with chain saws and chaps,
To cut and drag the big trees and place them on racks.
The trees were all loaded, tied and transported, to the tree lot on Cleveland, to be unloaded and sorted.
With Pete at the helm and help on the way,
The job of selling was now well underway.
The weekends and nights were really fine,
Especially when we sold all of the pine.
The last hundred trees went as quick as a duce,
Only to find we had just one more blue spruce.
And finally it was over and the clean-up begun,
With hopes that counting profits would really be fun.
The tally was made and outstanding bills paid,
And the tree lot was closed for the year.
As we look to the future let's remember the theme,
That to have fun, and make some, it takes the whole team!

Forester's Day 1980

by Julie Carlson and Chris Krantz

The 1980 Forester's Day not only marked the 44th anniversary of this annual event, but also the 75th anniversary of the U.S. Forest Service. In recognition of the anniversary we were honored to have R. Max Peterson, "new" chief of the forest service present for the celebration. He arrived early Friday afternoon for a tour of the North Central Forest Experiment Station and Kaufert Laboratory.

At the banquet, Chief Peterson spoke of Minnesota's addition to Forestry and various present and future issues of U.s. forestry and entertained questions. Prior to Chief Peterson's speech and amidst the clatter of silverware of hungry foresters, the musical talents of Carol Buche and John Lenarz could be heard.

Gradually stomachs became full and the skits began. The students, both grads and undergrads, came up with some hits but the faculty, after a hard week of lecturing and research didn't have enough energy to come up with anything. They kept saying "next year", well we are still waiting. We have not heard from Washington yet but as far as we know, Chief Petersen survived the pancakes! The 1980 Forester's Day field events had a traditional start with Lumber Jill (Tina Jaworski) and Lumber Jack (Steve Nelson) sawing the first cookie. This was only the start though, of the many events to come, including the tug-o-war, keg toss, and tobacco spit.

Many awards were given out this year, the traditional as well as some unusual ones. "The Field Forester of the Year" was awarded to Mr. Tom Kraemer. This award is presented in acknowledgement of outstanding achievement in the field of forestry in Minnesota. He is a district forester for the Fairbault district.

The Uncle of Paul award went to Dr. Villis Kurmis, the club's advisor and the Son of Paul award went to Dale Dose, the club's vice-president. These awards are given to the faculty member and the senior student who have contributed most to the club. The club also gives out scholarships to club members who show an active interest and leadership qualities in club activities. This year scholarships were given to: Cheryl Gustafson, Dorothy Peter-

The crooners entertain the masses

son, Mark Johnson, Bill Dinesen, Larry Himanga, Katie Jacobs, Carol Buche, Mardee Rath and Chris Krantz. I mentioned there were some unusual awards, too. Well, leave it to Carl Voght to come up with the "dead fish awards" for the imfamous caroling crew of Marna Butler, Liz Zutz, Mark Johnson, Kate Turner, and Mrs. Kaufert.

After the goodnights were finally said, a large group with happy feet set out for the Bel Rae Ballroom for a polka-practice party in anticipation of the Stump-jumper's Ball. While they were dancing 'til the wee hours, the faculty struggled to get out of their beds and on the job. This year's breakfast wasn't just going to be the ordinary Logger's Breakfast — Chief Peterson was coming!

Chief Peterson, USFS

The tug-o-war, being one of the first events of the day, saw the largest crowd. To the crowds pleasure, forest resources beat the graduate student-faculty team. Both teams did well, considering the footing was less than ideal, namely a sheet of ice.

The keg toss drew many eager foresters to it's challenge. The technique here is the key to success. Lumber Jill won this event using the underhand method, so I think I'll take a tip from her.

This year there was a major upset in the tobacco spitting contest as Rotten Ralph, champion for the last three years was outdone by Lumber Jack. With three spits a piece, there were quite a few high foresters after this event.

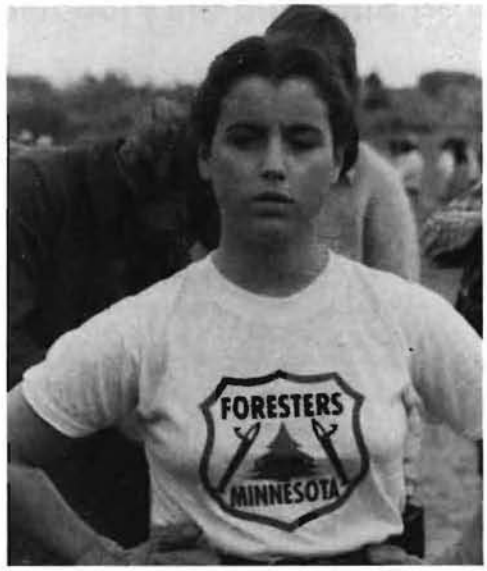
Tell us, Carl, who was that masked man?

Even with Green Hall offering a myriad of hot things to drink and a place to warm up (the temperature was a good -15 F), by the end of the day the crowd had dwindled immensely, only to reassemble at the bean feed. The bean feed was chaired by Mike Lindgreen and Cheryl Gustafson, who did a good job. The food was gourmet fair for foresters, including pizza burgers, french-fried cauliflower, and shredded potatoes with cheese. There were many other goodies too that you would never expect. It was wall to wall people in the apartment and I have no doubt that Mike will be cleaning it for months to come, maybe even finding a lost forester under his coach. All in all, with free beer, who was to complain.

The Stumpjumper's Ball followed the bean feed at the Northstar Ballroom under the music of Sunny Rogers polka band. The band played a decent variety of polkas and slow waltzes. Prizes were given out of the day's events and the "beardless wonder" contest was held, with Randy Hoffbeck winning best all around beard.

After such a successful day full of good times, tough competitiion, and tired feet, we will look forward to next years F-day anticipating even faster times, farther tosses, and cleaner tobacco spits.

Studying the effects of Mass Flow



"I wanna talk to the judge . . ."

Winners of the Field Events

Womens Keg Toss
Tina Jaworski
Lisa Hanson
Katie Jacobs

Mens Keg Toss
Bob Leibfried
Kelly Fleissner
Jim Brockman

Tobacco Spit
Steve Nelson
Terry Doyle
Rotten Ralph

Match Split
Cheryl Gustafson
Sue Poche
Tina Jaworski

Two — Woman Bucksawing
Sue Poche & Liz Zutz
Tina Jaworski & Celeste Lewis
Marde Rath & Becci Speares

Two-Man Bucksawing
Bob Leibfried & Joe Zuzek
Kelly Fleissner & Brian Ayers
Dick Moore & Wayne Herberg

Co-ed Bucksawing
Vicki Gregonis & Bob Leibfried
Carl Vogt & Tina Jaworski
Dot Peterson & Chuck Owens

One-Man Bucksawing
Bob Leibfried
Tim Kennedy
Duncan Ferguson

*several other events were cancelled because of lack of snow

Foresters in a little game of catch

Rotten Ralph's better half

"I Survived the Floodwood Bogs"

or

(a true life adventure of a summer spent traversing the Toivola swamp)

by Mark Johnson

June 2, 1979 finally marked the end of winter in Minnesota. For the first time in twenty-seven months, green grass could be seen amidst the snow! It was then I decided to get a job. I was fed up from earning a living getting people drunk at Met Stadium. Apart from seeing all the Minnesota Twinkee and ViQueen games free and making 25 bucks an hour doing so, beer vending didn't have that many advantages.

So with the help of Phil Splett, I landed a job with the Division of Noteworthy Rascals (D.N.R. for short). I was to be employed?? at the great northern metropolis of Floodwood, Minnesota. Spittin' image-wise, Floodwood from a timber standpoint wasn't much different from northern Greenland. However, from a hydrologist's standpoint, Floodwood was the panacea of North America. To the east stretched the enormous Brookston bogs, to the south the immense Cromwell bogs, to the west the widespread Swan River bogs, to the north the vast impenetrable Toivola swamp. And right in the middle was Wally's hamburger joint.

TV stars; still waiting to be discovered

I could spend the rest of this alleged article bombarding you with a flurry of knowledge I incurred with the D.N.R., but since that would put an end to this story in one, or perhaps two sentences at the very outside, I won't. Instead, what you are going to hear, like it or not, are eleven things you should know before you get hired to work in Floodwood this summer, or any other nearby flooded town on the southern extremity of the "Range". (Hi Bob, hi Larry.)

1. You should be well aware that only in Floodwood do they have more saunas than townsfolk.
2. Only in Floodwood do they consider English as a foreign language. In that neck of the woods, Finnish is #1.
3. Only in Floodwood do they measure the success of the abundant nightly parties in terms of the number of people who are still on the floor, passed out, at 11:30 a.m. the next morning.
4. Only in Floodwood do they use electron microscopes to age black spruce cores taken from an increment bore.
5. The best way to cruise a stand of Floodwood timber is to walk the stream beds. This is much easier and surprisingly much drier than traversing the bogs cross country.
6. Only in Floodwood do they measure tree heights in inches and diameters in millimeters. They reserve the feet to measure the standing water you are in and inches to measure the blood you've lost from mosquito attacks while accomplishing the above procedure.
7. In Floodwood, timber trespass is about as common as a Minnesota Viking Super Bowl Trophy. Any tree over a foot in diameter seen on a logging truck is immediately ruled out as a possible timber trespass violation because, quite frankly, trees of that magnitude were extinct on the Floodwood district around the time crosscut saws were invented.
8. In Floodwood, five gallon pump cans are filled not with water, but rather with mosquito repellent.
9. Pulpwood is cut by two methods in Floodwood. The easiest method is cutting six inch diameter black spruce trees. The more common method, however, is digging out old white pine stumps, compliments of the 1918 Cloquet fire. The spruce pulpwood is usually cut in 100 inch and the pine in 10 inch lengths. However, Board foot volumes are relatively equal.

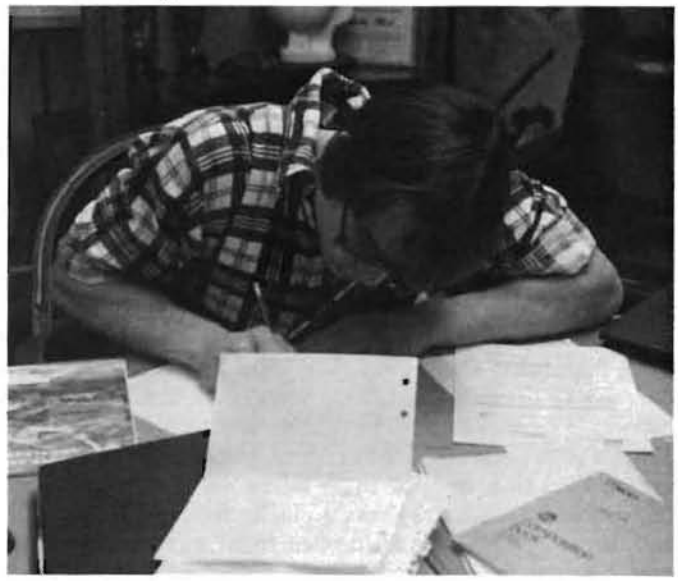
This is our mandatory "Isn't that cute" shot

And if you believe that story, Joe has some swampland in Florida he'd like to interest you in

10. The Biltmore stick is undoubtedly the most handy measuring tool on the Floodwood district. It works extremely well in determining the depth to which the front axle of your rig is buried in muskeg, when the road you thought you were driving on was in actuality an old muskrat runway.

11. And finally, the procedures for setting up a timber sale in Floodwood should be outlined because the method is definitely unique in Minnesota and possibly for the entire planet. This is an extremely important point, because Dr. Ek, to my knowledge, never touched on this subject. First things first, the possible timber sale area is cruised. Since we had no prisms, we used ordinary roofing nails. This point is irrelevant however, because no matter what instrument is used when cruising, chances are that no trees will fall in your plot center anyway. If the site index is 8 or less, the area is ruled out as a timber sale, because Potlatch is currently only paying $32/cord and not per tree. If the site index is 10 or greater, the area is reserved from all forms of cutting and in Flodwood it is designated a botanical oddity and left for study. If by any more than remarkable chance the area has a site index of 9, the area has a chance of being sold for timber. Many complexities must be dealt with before the area is actually put up on auction. If no northern pike spawning grounds will be seriously altered because of the harvest of timber, then road costs must be assessed. Due to the rather inorganic nature of the soils in and around Foodwood, past district records show that 2 million yards of fill are needed per mile of logging road. If the logger has the means of acquiring this rather large amount of fill, he or she may then buy the timber. The final cruise is rather elementary. Any tree large enough to support a house wren's nest is cut. Final timber volumes of pulp trees cut per acre show a wide range of variability, but generally are related to wren clutch size.

One final word must be mentioned, I could never have possibily composed this tale about Floodwood without the kind help of my employers. My sincerest thanks goes to Vic, who with the help of his wife Cathy, provided home-cooked meals on occasion after a day in the bogs. Swantee provided me with all the crudest Finlander jokes and when I was shipped over to the city of Alborn, my thanks are definitely in order to Sig, who endured my Lake-of-the-Woods fishing stories.



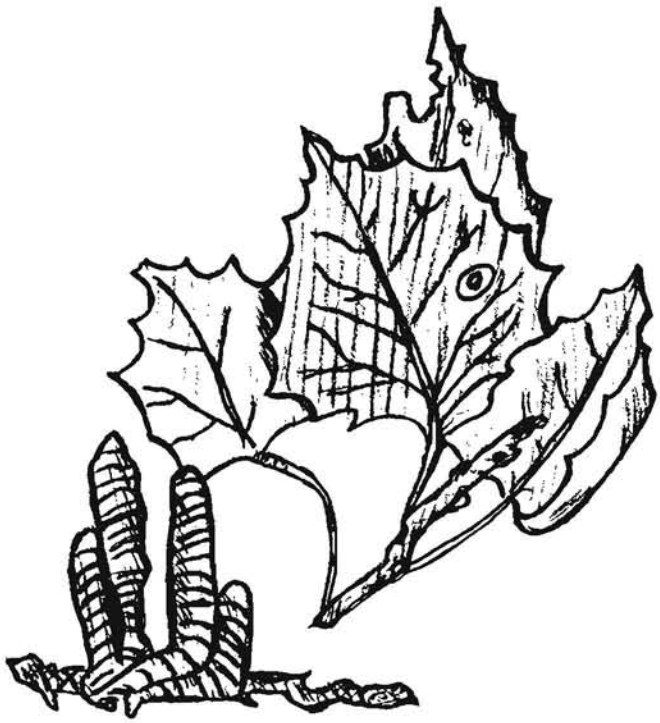
Still a whole 3 minutes before the paper is due

1979 Spring Management Safari to Southeastern Minnesota

By Bill Haugan

After stereoscopically scouting out the turkey interest in aerial photo class, I recruited Terry Doyle, Dale Dose, Sue Madson, Mark Johnson, Melody Himanga, and Tina Jaworski to come on the Forestry Club's management safari. While barely underway on Friday afternoon, we seemed destined for failure when Terry Doyle's car had a blowout. The spare was flat and the rim didn't quite fit the hub. John Stright stopped by to lend a hand, but we needed a tire. Terry eventually got a good deal on a used one in Zumbrota and we continued South. We were to meet Dale, who had gone ahead to St. Charles for a hot date. While waiting, we ordered breakfast at a local cafe. Still no Dale.

We entered White Water State Park and were escorted to the Pioneer Group Camp. We set up tents, and the last thing I remember before falling off to sleep was Mark trying to decipher which tree the owl hoots were coming from.



We rose before dawn and shook Dale out of his car where he had sacked out at about 3 A.M.. We met up with Park Naturalist Dave Palmquist, and he guided us to an area where a few dozen turkeys had gone to roost the night before. We stalked through a farm and took up positions along a pine plantation. From there we could look across a grassy field to a wooded draw below without being seen. Dave uttered seductive female clucks from a mouth held call, but the harsh wind whipped them away before they ever reached the roost site. To increase his calling range, Dave tried an accordian hose that went gobble-gobble gobble-gobble. This call is supposed to arouse the competative instinct of a tom who wants to steal a harem away from the turkey who is gobbling. The turkeys did not cooperate.

Back at the campground, we watched a film on wild turkeys in Missouri. We learned that the mixed wooded draws and farmland of Winona and Houston counties make excellent turkey habitat. Here the birds can eat alfalfa and corn in addition to acorn meat and bugs. Snow on the southern exposures melts quickly allowing the birds to travel without flying. Since turkeys were introduced to this area, the population has increased enough to allow an annual cropping through limited sport hunting. Although neither we nor the hunters were successful that weekend, three weeks earlier census takers had pinpointed sixty turkeys (by their calls) from one station.

Terry Helbig, DNR Forester out of Lake City, met us at the park and showed us progressive aerial photographs of the area. It was a sad story. The hills had been cultivated for wheat until the soil lost its fertility. Then corn was grown, but that too was stopped when the top soil began eroding away. Finally, cattle and goats were allowed to graze till they could no longer negotiate the deepening gullies. Periodically, flooding buried crops and homes with silt. The farmers gave up and the town of Beaver was abandoned.

Once the government acquired the land, seedlings from the few parent trees, many planted by squirrels, were protected and grew to cover the river valleys. Another improvement we saw were ponds dozed out at the heads of ravines in order to increase water infiltration while reducing runoff. However, the battle against erosion continues as the world market for food encourages farmers to extend their fields further. Let the town of Beaver remind us of the past, to help us avoid these same mistakes in the future.

Terry took us to see an American chestnut tree which was planted outside its range. Although unaffected by chestnut blight, it was in a frost pocket and had suffered winter injury. Next, he brought us to Richard Dorer Memorial Hardwood Forest, a newly acquired parcel above Weaver. From here one could see down the Mississippi and up the Whitewater. These State Forest lands are open to the public for a variety of pastimes, including

camping, hunting, snowmobiling, horseback riding, hiking, picnicking, berry picking, and skiing.

Terry then showed us an oak sale that he had marked out for a farmer to thin and obtain inexpensive advance reproduction of the heavily seeded oak. With the large fuelwood market, the State maintains strict utilization standards. However, we saw sales on private land where an enormous amount of wood was left.

We spent the rest of the afternoon trying to keep up with Joe Deden, a recent graduate of the College of Forestry, as he guided us over a family homestead near Hay Creek. He runs a kiln for a furniture company in Chatfield and consults private forest owners to ensure a continuing supply of hardwood for the plant. He gave us a dendrology review and often posed questions to us. We walked along a network of ski trails. Joe's approach to people interested in managing their property, is to get them out on it. Several woodland owners came out with us that day. Many wildflowers were in bloom and we regretted not having our notes from Itasca. Mrs. Deden came through with the names of Wood anemone, Jack in the pulpit, and Bloodroot. We saw single walnut trees worth several thousand dollars on the veneer bidders market. Joe mentioned the importance of getting land owners to set up their property as a legal business within three years of purchase. Walnut trees need weed control and careful thinning. They also need to be protected from grazing, as livestock will sear the root flare with their hooves when rubbing against the trunk, allowing rot to enter.

We also saw a newborn calf belonging to the Deden's neighbor. I was about to take its picture when Momma cow came snorting towards us. And who could forget the raccoon we saw with its masked face protruding from a squirrels nest. Back at the farmhouse, Mrs. Deden stuffed us with doughnuts and extended an invitation to plan another safari when the snow falls.

Tim just realized his zipper is caught

Summer in Side Lake or Does Bob Leibfried Really Admit He's From This Area?

by Doug Plasencia

During the summer of '79, I was employed by D.N.R. Forestry as a summer student. Stationed in the heart of "da-range", in the town of Side Lake, I was quickly indoctrinated into the methods of field forestry. My first day on the job was a day full of many questions, and a first exposure to regeneration checks. The technician and I drove out to the area to be inspected and that's when it became apparent that he had a reason for bringing his rubber boots. Our check was on seeded black spruce, but before we got to the planting site we had to walk in ankle deep water, after that I may as well have been barefoot. Ignoring the bootfull of water, I was busily walking the bog looking for signs of spruce. Deeply involved with the search, I stumbled over a low cut stump. The next think I knew, I was up to my forearms in water and mud, and I was sprayed from head to toe — that wasn't too serious as my main concern was trying to find my glasses. I frantically felt the ground my eyes squinting to focus until finally I found them, resting on high ground. Ignoring the technicians laughter, I continued on my way and finished the project.

Part of the education with this job was my introduction to cooking on a very limited budget. Most of the time, I ate fairly well, but once in awhile, I really out did myself. For example, after adding tuna and sausage and chopped onions to macaroni and cheese, I decided it needed something to spice it up so I added chili powder (I'd like to see Spallaci's top that).

After my stomach recovered, the moments that really drove me insane, were the two weeks I worked with Vince. Vince and I were assigned the job of trail maintenance, or T.S.I. work. I didn't mind the job, just as long as a chain saw was running, or our 1951 army jeep was howling down the road, because the problem was that Vince thought he was a self professed expert in everything. One afternoon when Vince and I were out doing T.S.I. work, it was getting ready to rain hard, so we decided to head back to the station. Driving back, I noticed the temperature gauge was registering hot; I pulled over and we went out to survey the situation. We were greeted by hot water flowing from the coolant overflow. Vince stepped forward to alleviate the problem. I asked him "Vince, what are you doing?" "I'm going to take off hte radiator cap to blow the steam." he said. "Wait a second Vince, If you do that we will probably lose most of the water and you will hear one heck of a boom." Vicne replied, "Oh, . . . but how else can we get to the thermostat?" as he pointed to the radiator. "Vince, I hate to tell you this but the thermostat isn't located in the radiator." "Doug, are you sure . . .?" "Positive, Vince." We finally managed to limp our way back to the station, with Vince still rambling on about the 20 pound bass that got away.

This job may sound like it was a comedy of errors, and at times it was. However, I learned quite a bit, and I would be ready to leave in a moment if offered the job again.

Practical field experience in amputating lower extremities

Sweet Summer Smells

by Kay Schwieger

The first thing people think of, when they think of paper mills, is the smell, which some folks tend to regard as being somewhat foul. For a person to actually be anxious for a job in a paper mill, that person must a) be hysterically insane b) be financially desperate, or c) be a pulp and paper major. During the middle of finals week, Spring Quarter 1979, and with no definite summer plans, I was very anxious, and qualified to work in a paper mill on all three accounts.

Of course not all mills can boast of the characteristic "essence de pulp mill", but Potlatch Paper Co., in Cloquet, Minnesota, can, and that is where I finally found summer employment. After finishing my finals for my sophomore year at the U., I armed myself with my knowledge (I could positively identify a piece of paper), and headed north.

My first week at Potlatch I spent by getting continuously lost and disoriented in the mill. After I finally figured the place out, I spent the summer doing a lot of mill sampling, testing, and even working on a project of my own. With the help of a lot of patient people I managed to learn a great deal about Kraft pulping and the

papermaking process. I also picked up some general wisdom that may be helpful to you, should you find yourself in a mill this summer:

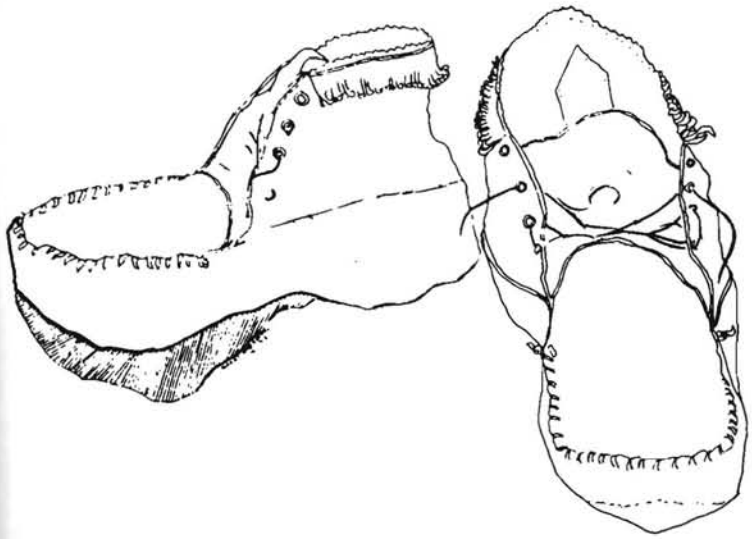
1. As a summer student you will be among the mill's "lowlies", and will have the opportunity to walk a distance equivalent to the length of the Boston marathon every morning from your parking place to the mill. Wear comfortable shoes.

2. If working in a Kraft mill, remember that you must breathe. Don't worry, though, because by the end of the week your nose will be desensitized. Over the weekend, however, your nose will begin to kick in again, and on Monday you'll have to start the whole process over.

3. If given the change to do some testing on black liquor, and if this testing involves pipetting the solution by mouth, don't inhale too fast. If you think the stuff smells bad, wait 'til you taste it.

4. Never make fun of the town you are working in. Cloquet has a grocery store with a large sign in front that says "Disco Foods". This cracks me up every time, but my attempts to poke fun at it left me with the impression that the locals were not amused. This may not seem like an important point, but remember that the town even has a fireworks display for Labor Day, so it may be best not to undercut the local patriotism.

Next summer I hope to be busy at work in a paper mill again, so if you are kind enough to come visit me, you had best be armed with a nose plug (just in case).



New Scholarship

The Sven and Emil Bergland Foundation recently granted scholarship money to the University of Minnesota Foundation. The money will be divided into three scholarships to be awarded to juniors in the College of Forestry. Two of these are designated to recognize the efforts of the co-editors of Gopher Peavey in furthering the spirit of the college. The third scholarship is to recognize a deserving junior in urban forestry. The student must show professional promise, good character, high academic standing, and demonstrate communication skills. These scholarships are to be awarded on a one time basis this year.

SCHOLARSHIPS

Bergland Scholarship
Kelly Fleissner

John H. Allison Scholarship
Dan Grindy

Ralph Lindgren (Carolind) Scholarship
John Lenarz
Larry Himanga

Caleb Dorr Scholarship
Kirk Foettgering
Dennis Zadlo
Russell Henly
John Lenarz

Federated Garden Club of Minneapolis
Colleen Oftedahl
Jeannette Siebrass
Bill Norman
Margaret Crowley
Kelly Fleissner
Christine Krantz
Jeff Roy
Jeff Golden
Paula Larson

Henry Schmitz Student Leadership Award
Bob Liebfried
Bill Norman
Barb Peterson
Dale Dose
Pete Willis

Helen A. Young Scholarship
Marna Butler

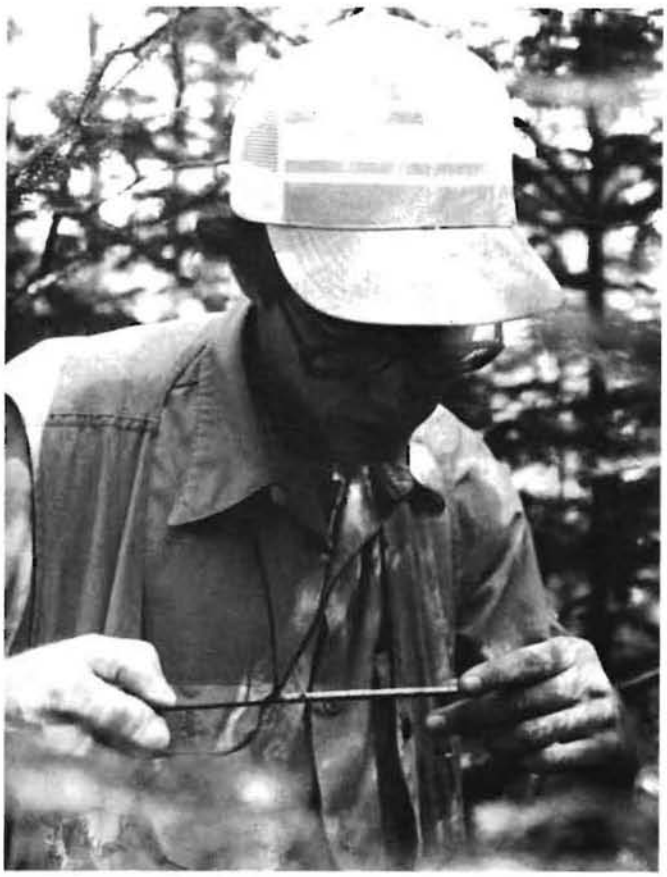
E.G. Cheyney Scholarship
Larry Killien
Rebecca Spears
John Goad

Samuel B. Green Scholarship
John Lenarz

R.M. Brown Scholarship
John Lenarz

FORESTERS
UNIVERSITY
OF
MINNESOTA

Governor Quie proclaims F-Day official while surrounded by people of high moral character, including Bob Liebfried, Ken Winsness, Kate Turner, Terry Brault, Tina Jaworski, and Liz Zutz



While contemplating lunch . . .

Student Representatives to Student-Faculty Board

Dave Phillips	Fresman class representative
Kate Turner	Sophomore class representative
Margaret Crowley	Junior class representative
Mark D. Johnson	Senior class representative
Duncan Ferguson	Graduate class representatives
Susan Rutherford	
Bob Leibfried	Forestry Club
Barb Peterson	Forest Products Club — Forest Products Research Society
John Goad	Gopher Peavey co-editors
Rebecca Spears	
William Norman	Recreation Resource Management Club
Rene Needham	Xi Sigma Pi
Mark D. Johnson	All Campus Council
Dale Dose	St. Paul Board of Colleges
Bruce Overson	St. Paul Board of Governors
Dick Enrooth	Twin Cities Student Assembly

ALUMNI

Reminiscences on J.H. ("Pop") Allison

by Frank H. Kaufert

It was my privilege to take a number of courses from "Pop" Allison, who in his many years on the College of Forestry faculty taught many of the courses included in the curriculum offered. One thing you could always be sure of was that the information provided was correct because "Pop" was a stickler for figures and numerical data. Another thing you could always be sure of was that Pop's examinations would contain questions on material covered when you were absent from class. This was an effective way to discourage students from skipping classes.

All of Pop's students well remember that on occasion Pop would use a swear word or phrase to emphasize a point. "Papa" Palmer, a 1922 graduate who entered the ministry, described Pop's occasional use of swear words as "Pop knew the words but didn't have the tune."

Pop's memory for figures was impressed on me when I accompanied Cheyney, Brownie and Pop on a trip to attend the Salt Lake City SAF meetings in 1947. Pop had prepared so well for the trip that we consulted him on highway numbers and distances rather than get out and study the road map.

Pop was a strong cohesive factor as a faculty member of the University and of the College of Forestry. He was one of the first College of Forestry faculty members to engage in research on Minnesota forestry problems. His periodic measurement of the famous Chapman plantations, Itasca Park virgin red pine stands, and many stands at the Cloquet forestry center and John H. Allison forest, provided some of our best information on red or Norway pine growth and productivity.

In addition to his research and teaching, Pop served on several legislative forestry interim committees and was highly regarded by legislators and others in State Government for his integrity and continual helpfulness in all efforts to improve the Minnesota forestry climate. Pop enjoyed his continued contact with the Lake Vadnais plantations which he helped establish and was justifiably proud when the City of St. Paul Board of Water Commissioners in 1968 renamed the plantings the John H. Allison Forest and arranged a special event at the forest to recognize his contributions.

It was through his continued efforts and contributions that Tau Phi Delta Fraternity was organized and continued its existence until WWII. One of Pop's satisfactions came when former Tau Phi Delta members, headed by J.H. Coffey — class of 1928, established a scholarship in his name and honor in the College of Forestry. The scholarship hopefully will be continued and even increased to recognize the close-to half century of service to the College of Forestry, the University and the State by a great gentleman. He may not have had the tune when it came to swearing, but he was in tune with life and a great contributor to the development of forestry and conservation for almost three quarters of a century. We miss his good humor, his kindliness and friendship to all and his valuable productivity in a field he selected in 1905 and in which he remained active and productive until very recently.

Lincoln's statement in his Second Inaugural Address "with malice toward none and charity to all" fits Pop's way of life and career so well. He will be missed by the several thousand Minnesota graduates he influenced, and by the profession he helped build.

Minnesota Forestry Alumni Association
Report from the President
Jerald Mortensen

Members
Vernon Schumacher — '56
Michael Markell — '67
Clarence Eggan — '40
Clarence Buckman — '40
Howard Olson — '47
Paul Scherman — '76

Executive Board Officers
Jerald A. Mortensen — '50 — President
William Westerdahl — '59 — Vice-president
Marvin Smith — '44 — Secretary-Treasurer
Richard Skok — '50 — Ex-officio
Rodney Rowe — '50 — Ex-officio

Several important events occured this past year that have affected the Minnesota Forestry Alumni Association as well as the College of Forestry itself.

The Spring Banquet was held at McGuires Inn of Arden Hills on May 10, 1979. Our guest speaker for the evening, Mr. Tait Trussell, Vice-president, AFI; commented briefly on, "The mission and Structure of the American Forest Institute".

The Fall Banquet was held at Holiday Inn in Roseville on November 8, 1979. Our guest speaker for the evening was Professor Eugene Wright, Department of Rhetoric, University of Minnesota. Professor Wright talked on, "The Battle of the Little Bighorn — A Classic Communication Failure".

Attendance was very good at both Banquets and alumni took this opportunity to meet with old and new acquaintances.

Dean Richard Skok gave an update on the structure and organization of the College of Forestry including its new and changing faculty.

The MFAA Board met with Dean Skok in regard to the University of Minnesota's Planning Document for the College of Forestry. This document included education, research and extension programs. It also included projections on the money, buildings and staff and faculty needed to accomplish this mission.

At this meeting we also examined the possibility of forming a College of Forestry Alumni Association within the University of Minnesota Alumni Association. Thsi would not replace the MFAA.

The purpose of forming the College of Forestry Alumni group would be to obtain formal recognition, cooperation and coordination with other University alumni associations. This will give us a voice in the overall alumni structure which we do not have the MFAA!

The Working Drawing Fund request for the Green Hall Expansion is before the legislature "AGAIN". Any support you can show your legislative representatives regarding this project will be appreciated by the College staff and the future students of the College. What we do in the next months and year will greatly affect the status of Green Hall and the College of Forestry.

As president, I would like to express my gratitude to the Executive Board members. A special thanks to Marv Smith for all his help, without which, very little would have been accomplished.

Hope to see all of you at your up-coming semi-annual meeting in 1980.

Observations at the Town Hall Meeting in Boston

by Al Alm

The 1979 Society of American Foresters held their national convention in Boston on October 14-17. The theme was "issues for the 1980's". This Boston Tree Party was keynoted by Senator Patrick Leahy from Vermont. The featured luncheon speaker was Minnesota's Bob Berglund, Secretary of the Department of Agriculture.

The "ice-breaker" held on Sunday evening is the first main event that most participants attend. If you have purchased a ticket for $2.00 you have the opportunity to enter the huge ballroom, purchase a drink for another $2.00 and attempt to find old friends, shake their hand and shout to them in an attempt to carry on a conversation above all of the noise and din caused by several hundred people milling around. Actually one of the real highlights of any national convention is renewing old friendships and making new acquaintances. But this is better done in the hallways or someplace other than at the "icebreaker session". I have found that the real value of these meetings is the opportunity to just chat with a lot of people and compare notes on activities. It is always rewarding to discover that you are not the only one who has problems with research projects, teaching and simply keeping up with general forestry matters. It is always good to find out what is going on in forestry around the country by getting information firsthand.

The next big event is the opening general session which always seems to be well attended. Again, a mass of humanity congregates in the big ballroom, this time in chairs rather than milling around, and proceeds to listen to a series of speakers or panel members. I think the average forester has a bit of difficulty getting seriously interested in this mass production.

The concurrently run technical sessions begin on the first afternoon and continue for the next several days. Here one finds himself shifting from session to session trying to garner some information on subjects of interest. I found myself spending a lot of time in the session on "The Forester and the Regulatory Jungle" and was again assured that the world is indeed a complicated jungle. Then of course I was drifting in an out of the silviculture sessions with the hope that I could pick up some useable information.

The working group sessions are perhaps the most worthwhile. It is here where the individual can really get involved if he or she wishes. There is ample opportunity for discussion and input. I attended the silviculture working group session and especially appreciated the update on the silviculture certification process and the discussion on forester registration.

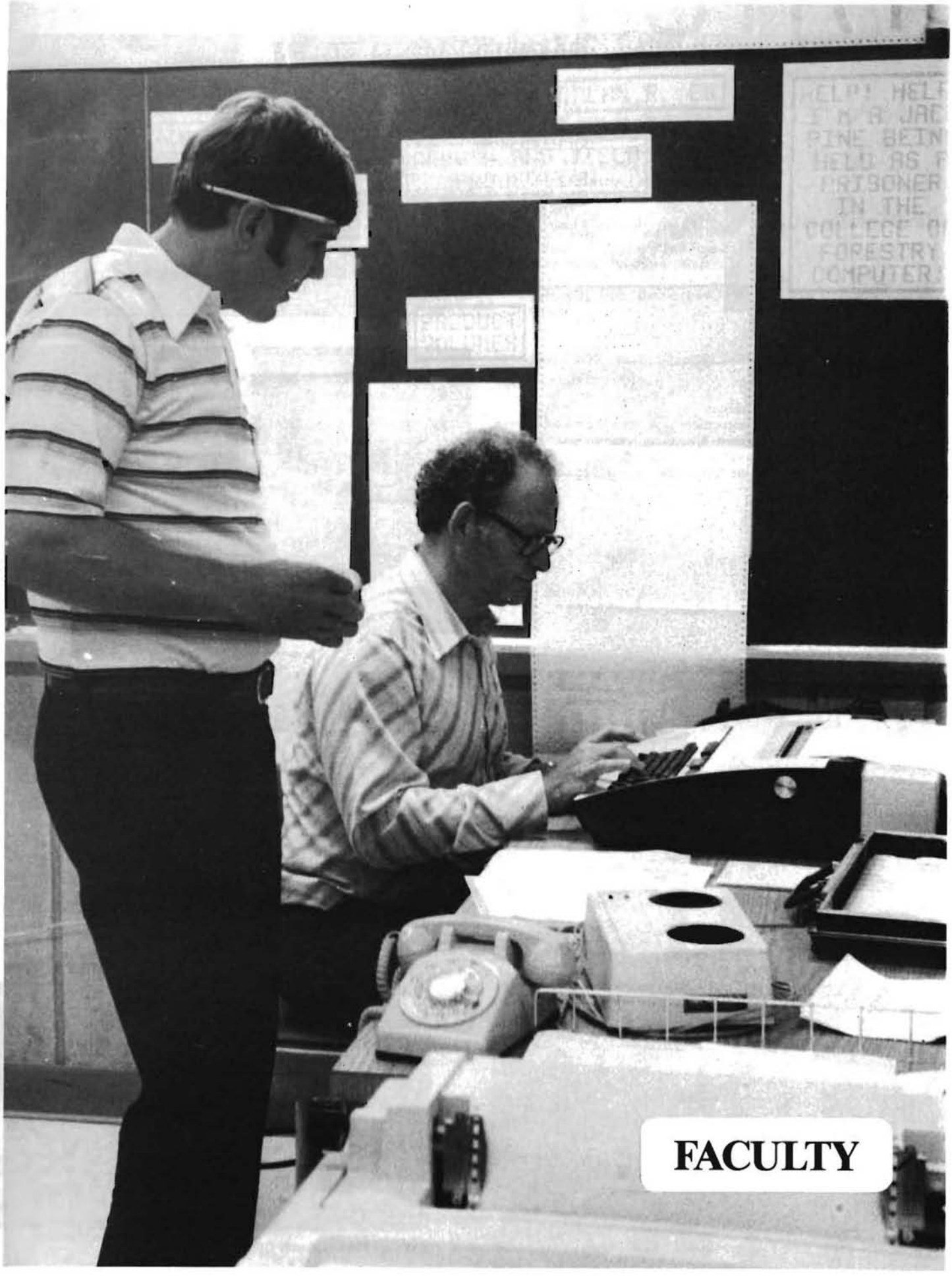
The numerous displays and exhibitors are another worthwhile part of the convention. Of course there are always the freebies that are given out such as yardsticks and coffee cups. If you have questions about certain forestry books the representatives from the various publishing houses are there. The various forestry supply firms have good displays of interesting equipment.

It was good to visit with the many students who attended this convention, the majority of whom were from Wisconsin. Apparently they chartered a bus and came enmasse. Hopefully other forestry schools will take their cue and organize for student attendance at future meetings.

Of course, if you got tired of attending meetings and chatting with people you could take a tour of the historic city of Boston. The walking tour on the Freedom Trail that started in downtown Boston not far from the meeting headquarters was excellent. A four-hour stoll led you through a historic cemetary where John Hancock and early American revolutionaries are resting, to historic Faneuil Hall where you could spend considerable time in the many little shops, to the house where Paul Revere lived, to the famous North Church. Then if you still had some legs left you could cross the river to visit the U.S.S. Constitution and the monument on Bunker Hill. Then when you got back to the Boston Park Plaza Hotel (by way of subway since your legs are a bit tired by that time) you could have a 90 cent cup of coffee or go across the street and enjoy a bottle of beer for $2.50

All-in-all national conventions are about what you want to make of them. It will be interesting to see what the future brings with the proposal of having regional meetings instead of the huge national event.

Minnesota's unique winter foliage


FACULTY

FACULTY AND STAFF

RICHARD SKOK
Vice President, Association of State College and University Forestry Research Organizations; Member, Joint Council on Food and Agricultural Sciences of the USDA; Member, Industry Executives — Dean's Committee of the Forest Industries Council; Trustee, Wilderness Research Foundation.

FRANK KAUFERT, Dean Emeritus
Teaching: Wood drying, preservation; gave lectures on wood preserving chemicals, lectures on forest history to organizations. Research: Continuing research on diamond willow and chestnut. Also involved in soliciting contributions for the Quetico-Superior Wilderness Research Foundation.

RANDOLPH BROWN
Professor Emeritus

FRANK IRVING
Teaching: Forest Resource Analysis at Cloquet, Forest Administration. Research: Fire management on Mille Lacs Wildlife Management Area; long-range burning project at Cedar Creek (begun in 1964). Chairman of panel which screened candidates for Minn. DNR Forestry Director position and of committee which reviewed performance of head of Forest Products Department. Also worked with Minnesota Chapter of the Nature Conservancy.

KEN WINSNESS
Coordinates advising: prospective student contacts; scheduling; bulletin preparation; S-F Board (co-chairperson); St. Paul Campus Coordinating Committee (Directors of Student Services-chm.); Student Organization Advising (general); orientation; registration programs; commencement programs.

Patricia J. Van Cleave, Sandy Smolka, Kathy Phelan, Clara M. Schrieber, Erin Brissett, Linda Douglas. Not pictured; Marilyn Workman

LaVonne Markus, Sandy Gibbs, Mike Kuether

FOREST PRODUCTS

JOHN G. HAYGREEN

Dr. Haygreen, Head of the Department of Forest Products, is on sabbatical leave for the 1979-80 academic year at the Department of Forestry, Auburn University. His work at Auburn has been concerned primarily with developing and instituting a new curriculum in wood science and technology and planning a forest products research program for their Department of Forestry.

JIM BOWYER

Courses Taught: Wood as a Raw Material, Wood Structure and Identification, Structure and Properties of Important Tropical Woods, Manufacturing Processes. Current Research: Faceglued Blockboard from Low-Grade Hardwoods; Economics of Log Merchandising at a Construction Site; Development of Computer-Aided Plant Design Technique.

ROBERT ERICKSON

I teach wood drying and preservation process, wood fluid relationships, and manufactured housing systems. My research includes energy conservation in lumber drying and moisture movement problems in relation to structural members of houses. As immediate past president of the Society of Wood Science and Technology, I'm currently a member of that organization's executive board.

ROLAND GERTJEJANSEN

Teaching: Pulp and Paper Technology, Wood-Base Panel Products Technology, Pulp and Paper Process Laboratory. Research: Concerned primarily wtih improving the properties of structural particleboard and waferboard and utilizing residues and little-used species as raw materials for those products.

LEWIS HENDRICKS

Coordinating author "Heating the Home with Wood" Extension Bulletin #436. Work and publications on preventing ice dams on Minnesota homes. Continue to plan and conduct Lumberman's Short Course, now in its 31st year, and the Hardwood Lumber Grading Short Course.

RALPH HOSSFELD

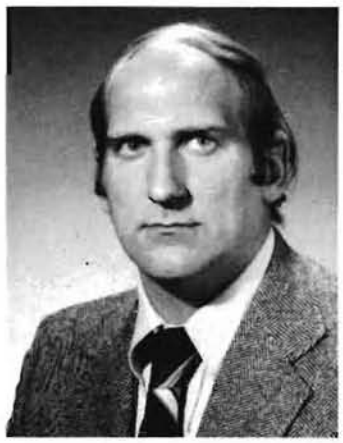
Teaches: FP5302 Wood Chemistry, FP5301

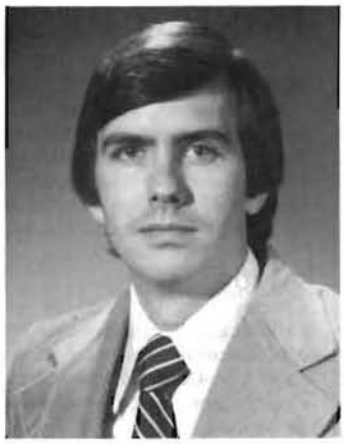
KARL KETTER

Teaches Manufactured Housing Systems, Forest Products Marketing, and Advanced Forest Products Marketing. Advisor for Forest Products Club and Gopher Peavey 1980. Current project involves the marketing of disease-killed hardwoods as a construction material.

RONALD NEUMAN

Teaches Pulp and Paper Process Calculation, Pulp and Paper Process Operations, Paper Engineering Laboratory, and Surface and Colloid Chemistry of Papermaking Materials. Research activities emphasize interfacial phenomena associated with the processing of fibrous wood material into paper and paperboard products by investigating the structure and dynamics of surface films. Attended meeting in Honolulu and San Francisco as chairman of two sessions on fundamental research in interfacial phenomena.





FOREST PRODUCTS

HARLAN PETERSEN

Extension programs and technical assistance in the areas of wood drying, lumber grading, utilization of wood from disease killed trees, forest products marketing, and use of wood for energy; teaching responsibility for Wood Industry Tours course; and minor research component directed at increasing utilization of disease killed elm.

STEVE SINCLAIR

It has been a busy year with utilization and marketing research on balsam fir and timber harvesting research. Residue utilizations was also a major topic we worked on in 1979-80. Other duties included teaching Wood as a Raw Material and serving as Treasurer of the Upper Mississippi Valley Section of the Forest Products Research Society.

Laurie Walsh, Carol Laffoon, Gayle Gordon, Emily Sundeen, Janelle Schnadt

The editor is dying to know just what this bunch is *really* watching

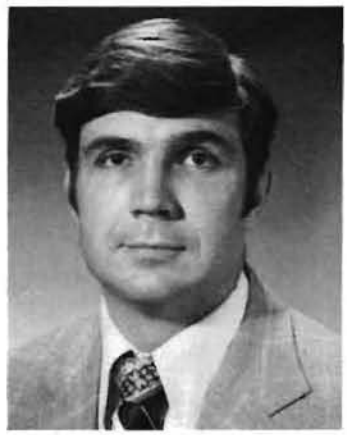
FOREST RESOURCES

GREGORY BROWN
Research: Relationship of cellular membranes to winter hardening in tree seedlings; reserve carbohydrate states in cottonwood cuttings during dormancy and storage. Organizations: SAF-editor of *Forest Science*, Book Review Committee, representative to Plant Hardiness Council; International Union of Forest Research Organizations-working group leader for "International Directory of Tree Physiologists".

EGOLFS BAKUZIS
I am teaching a course Foundations of Forest Ecosystems, working on Volume 8 of the series *Foundations of Forest Ecosystems (Lecture and Research Notes)*, and doing research on the ecological foundations of forest production in Minnesota.

KENNETH BROOKS
Research: Water resources of peatlands; Logging impacts on water yield, quality, and sedimentation on the North Shore of Lake Superior. Teaching: Forest Hydrology, Advanced Forest Hydrology. Consultant on watershed management projects in Morocco. Instructor of "Watershed Management and Environmental Monitoring" training course at the University of the Phillipines.

ALAN EK
Teaching: Field Forest Measurements, Natural Resources Inventory, and Forest Biometry. Research Interests: sampling and estimation methodology for forest resource inventory; forest growth and yield projection; methodology for development of stand management guides.



PAUL ELLEFSON
Teaching: Forest Policy Issues and Economics, Legal and Political Processes in Forestry. Research: economic structure of forest industry; implementation of state forest practice laws; economics of non-point water pollution; administration of county forestry programs. Member of Legislative Commission on Minnesota Resources Forestry Task Force; Chairman of Forest Products Research Society's National Conference on Timber Demand.

HANS GREGERSEN
Teaches two courses in Forest Policy and Economics, also Economic Analysis-Forestry Projects. Research in the economics of forestry. Involved with national training program for USFS employees. Wrote *Economic Analysis of Forestry Projects*, published by U.N. Chairman of Forest Resources Curriculum Committee and member of All-University Joint Research Committee.

HENRY HANSEN
As an "extra" to the past year's program of teaching courses in multiple-use silviculture and forest ecology, I made a trip to Scandinavia with research and seminars in Norway and visits to forestry colleges and experiment stations in Finland and Sweden. I also helped revise our regional silviculture textbook for publication in 1980.

TIMOTHY KNOPP
Teaching and research relating to recreation behavior and recreation land use planning.

FOREST RESOURCES

VILIS KURMIS
I have been involved with our ongoing ecological research in Voyageurs National Park and with Carlton County studies of forest productivity. Am teaching field ecology at Itasca Park and forest ecology classes in Green Hall. I have also enjoyed my year as Forestry Club advisor.

THOMAS LILLESAND
Co-authored book entitled *Remote Sensing and Image Interpretation.* Director of the Remote Sensing Applications Division of the American Society of Photogrammetry. Became Director of Remote Sensing Lab in Green Hall. Grants from NASA (satellite resource inventories) and Shade Tree Program of State of Minnesota Dept. of Agriculture (Dutch elm disease detection.)

LAWRENCE MERRIAM
Am working with Dr. Kurmis to complete a study of plant communities in Voyageurs National Park. Teaching includes Management of Recreational Lands and Recreational Land Policy. Working with many excellent graduate and undergraduate students in the Recreation Resource Management program. Serving on unending committees.

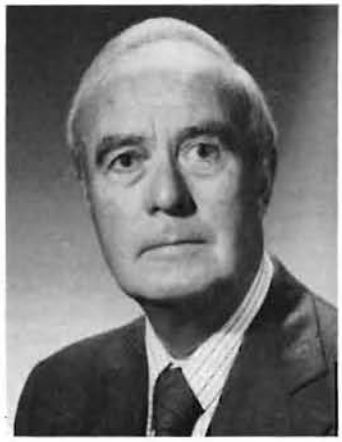
MERLE MEYER
In June resigned as Director of IAFHE Remote Sensing Lab to return to fulltime teaching and research. Currently teach courses in Airphoto Interpretation (St. Paul and Cloquet Field Session) and Range Management. Research emphasis on use of small-format aerial photography in forest, wildlife, and range management.

CARL MOHN
Specialization: Forest Genetics and Tree Improvement. Teaching Assignments: Dendrology, Intensive Silviculture, Forest Genetics. Research Projects: Genetic Improvement of Minnesota Forest Tree Species. Hybridization in *Populus.* Other: Cooperative tree improvement work with the Minnesota DNR and The Forest Industries.

DIETMAR ROSE
Projects dealing with the potential of wood for power generation, impacts of expanded timber management activities, economics of intensive silvicultural systems, development of superior harvest scheduling rules, design of data base management systems for improved decision-making, and the development of a regional competitive bidding and transportation model for the timber industry.

HAROLD SCHOLTEN
Tree and shrub species, of known seed source, are being tested for use in farmstead shelterbelts, field windbreaks, and under center-pivot irrigation systems. Working on designs of shelterbelts to reduce snow damage on young trees and design of windbreaks to get more uniform snow distribution over cropland.

EDWARD SUCOFF
Research as tree physiologist is in the areas of water relations, cold hardiness, and temperature-growth relations. Teaching includes Forest and Shade Tree Biology and Research Methods. Visited Indonesia for three months this winter to advise the faculty of a new agriculture and forestry school.



FOREST RESOURCES

PHIL SPLETT
Career Opportunities Coordinator. Provide information and help to students and alumni seeking forestry employment. Teach Conservation of Natural Resources and Important Forest Plants at Itasca. Currently S.A.F. faculty advisor for students and chairman-elect of S. Minnesota Chapter of S.A.F.

MARVIN E. SMITH
Extension education and informational services mainly directed to the non-industrial private forest owner in the following subjects: silviculture, management, harvesting; reforestation, shelterbelt, and windbreak establishment; Christmas tree production; maple sap collection and processing; public affairs and policy in forestry and resource management.

CARL E. VOGT
Environmental Conservation Education; conducts special classes for teachers and interested adults. Special interest in propagation and planting black walnut and other hardwoods. Conducts woodland field days, conservation classes for 4-H youth and others. Outside associated activities include, Christmas tree farm management, sawmill operation and custom wood products.

ALAN S. WHITE
Teaching: Meteorology, Forest Fire Management. Research: Studying the effects of different prescribed fire treatments, environmental factors, and land use history on the species composition of the Cedar Creek Natural History Area.

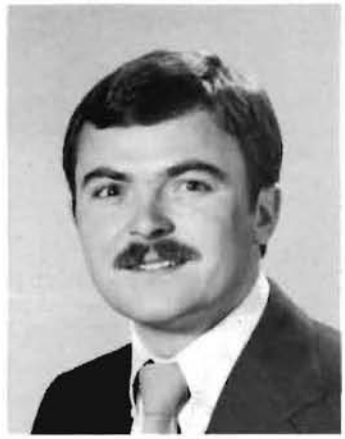
CLOQUET

ALVIN R. HALLGREN
Coordinator of Cloquet Forestry Center and Cloquet Forestry Session. Research: Develop and evaluate forest management practices for Northern Minnesota. Teaching: Forest Resources Analysis. Also Chairman of Minnesota Timber Law Committee.

ALVIN ALM
I teach basic silviculture course in St. Paul and am a member of a teaching team for Forest Resource Analysis, a course taught at the Cloquet Field Session. My primary research efforts are in the areas of artificial regeneration and site preparation. I am still quite active in the field of containerized seedlings.

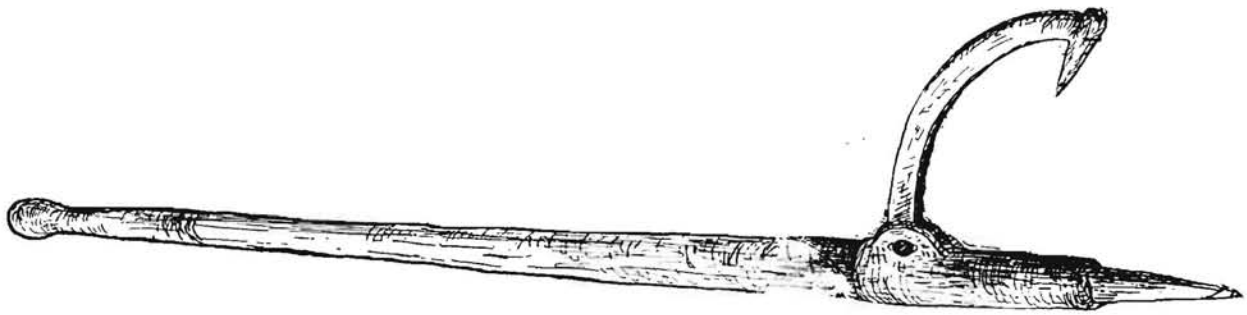
BRUCE BROWN
Teaching: Important Forest Plants (Itasca), Regional Silviculture (St. Paul), Field Forest Soils (Cloquet), Forest Resources Analysis (Cloquet) Research: Studying the dynamics of hardwood stands in Central Minnesota in order to devise improved silviculture and management systems. Work is underway in Aitkin, Cass, Crow Wing, and Itasca Counties.

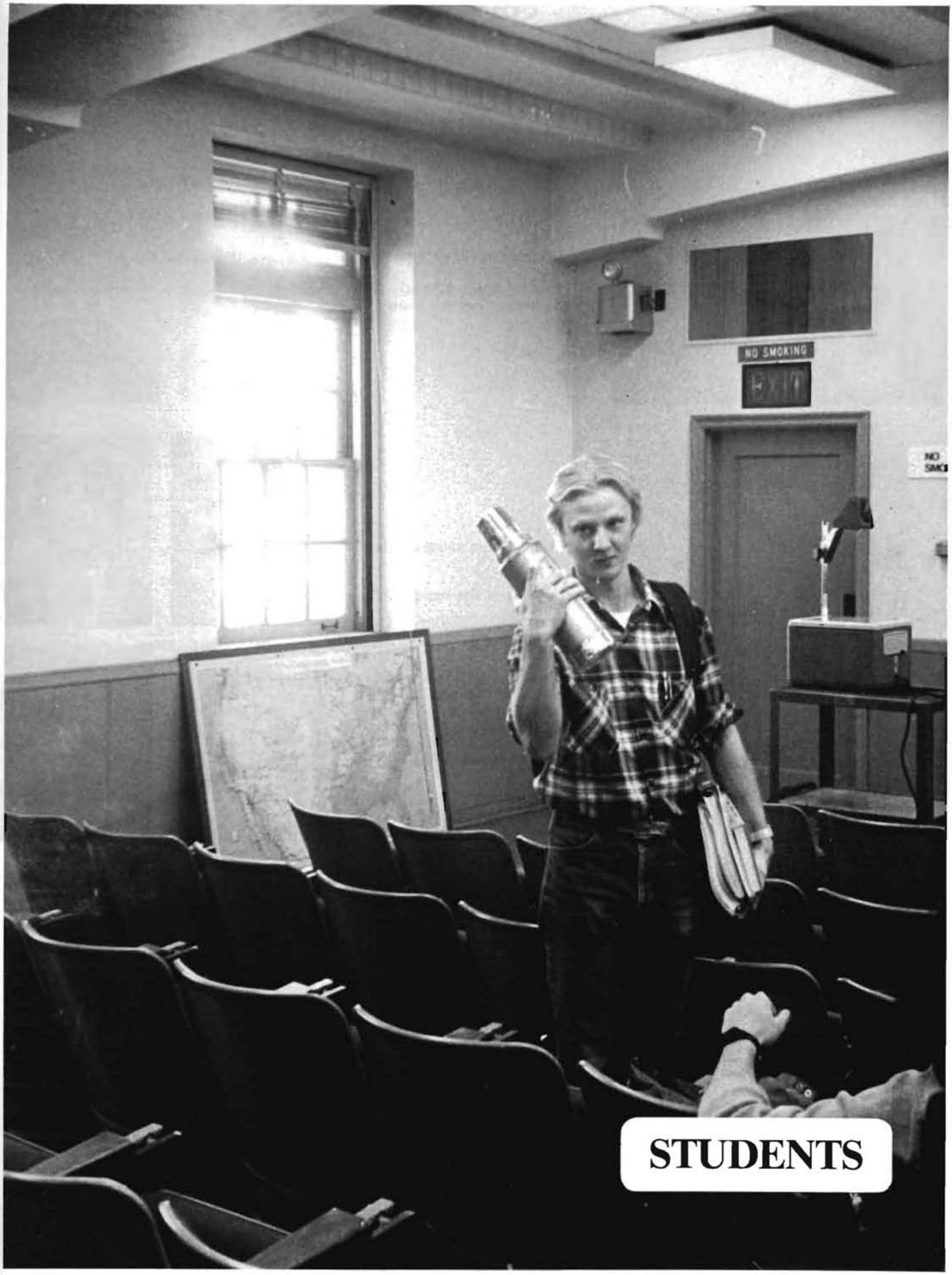
A. SCOTT REED
Extension-related work: Research landowner and logger educational needs, design small woodland harvesting/marketing system, publish newsletter to professional forest harvesters, and conduct logger workshops. Also teach Harvesting and Engineering at Cloquet and am Regional Chairman of Minnesota Tree Farm System.



EDWIN WHITE
Teaching: Field Silviculture, Advanced Field Silviculture, Topics in Silviculture-Forest Soils. Research: Peatland reclamation; nutrient requirements of northern Minnesota tree species; impact of intensive management on environmental factors and site productivity; use of wetlands for production of woody plants for fuel and petro-chemical substitutes.

CLIFFORD E. AHLGREN.
Guest lecturer at Cloquet and St. Paul. Currently with the Quetico-Superior Wilderness Research Center doing research on Eastern white pine tree breeding and the effects of perturbations on forest succession, emphasizing the reproduction potential of the forest floor.





STUDENTS

SENIORS


DAVID BANTA — FR-IM football, Minnesota DNR, USFS, BLM.

GEORGE ROBERT BARD — FP — Worked on oil drilling rig for two summers and ran snow removal service in winters


CHARLES A. BROTZLER — RRM.

RONALD CARLSON — FR — Urban forester for White Bear Lake and Village of North Oaks.

SUSAN A. CUTLER — FR — Xi Sigma Pi, Dakota County Parks Tree Inspector '77, stand examiner on the Fremont N.F., Oregon '78.


DALE P. DOSE — FR — Vice president of Forestry Club '79-80, Co-chairman of the 1979 Midwest Forester's Conclave, Chairman of firewood sales '78, Chairman of F-Day Banquet and Dance '79, Chairman of the 1979 Spring Dance, Co-Chairman of management trips '78, SPBOC representative for Forestry '79-80, Scholarships: Forestry Club Leadership and Achievement '79, William R. Miles '79, Henry Schmitz Student Leadership Award '80. Urban Forester for Apple Valley '78, Intern for Weyerhaeuser Co., Mt. Pine, Ark. '79.




DAVE ENSIGN — FR — Forestry Club, Conclave team member '79, Christmas tree cuts '78-79, Timber marker, Uncompahgre N.F., Colo. '79.

DENNIS FAHEY — FP — FP Club, IM Sports.

DAN GRINDY — FR.

BRAD GROVE — "Grubb" — FR — Forestry Club, IM football, softball, basketball.

AL GRUNDNER — FP.

CHERYL GUSTAFSON — FR — Forestry Club Executive Board '79-80

RALPH HANSEN — FR.

MARLIN HAGE — FR — Forestry Club, Carlos Avery Fire Crew '78-79, Chippewa N.F. '79.

WILLIAM HAUGAN — "Bill" — FS.

SCOTT HELLAND — FR.

JANE HESS — FR.

JEFFERY A. HOGENSON — FR — U.S. Armed Forces '75-77, BLM thinning crew, Salmon, ID, Minnesota DNR fuelwood survey.

MARK HOLIEN — FR — Forestry Club, St. Paul Chapter Inter-varsity Christian Fellowship, Surveying Technician in Chippewa N.F. '79.

MARK JOHNSON — "Ashkibagazibing" — FR — Well . . . as Dylan would say, "Don't follow leaders, watch the parking meters."

JOHN KELLEY — FR.

LAWRENCE M. KILLIEN — RRM — RRM Club, Gopher Peavey editor '79, Student Faculty Board, Outdoor Store employee.

GARY WAYNE KINCAID — "Bud" — FR — Conclave team member '77-78, Forester's Day, Sr. rep to Student Faculty Board.

JOHN KORZENIOWSKI — FR.

ROBERT LEIBFRIED — FS — President of the Forestry Club '79-80, Student Faculty Board '79-80, Conclave co-captain '78, Forestry Club Sgt-at-arms '78.

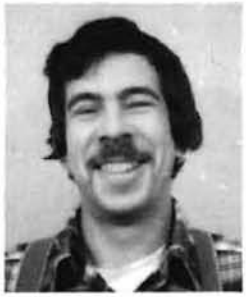
JOHN E. LENARZ — "John Boy" — FS — Forestry Club, Christmas tree cut, sales, and carolling '78-79, Picnic chairman '79, Conclave team member '79, CoRec sports, Xi Sigma Pi, Strummin' and pickin' (banquet and graduation commencements), Student Concerns Committee, Grievance Committee.

STEPHEN N. MATTSON — "Belushi" — FR — Forestry Club, IM volleyball, bowling, football, softball, wrestling champ, Theta Delta Chi.

STEVE MOBERG — FR.

BRIAN MURRAY — FR.

BILL NORMAN — RRM — RRM Club '78-79, President RRM '80, Student Faculty Board '79-80, Xi Sigma Pi.



TERRY NOVAK — "T" — FR Minnesota DNR, Exploration Geologist '75-76, USFS Oregon '79.

RICHARD J. NOVITSKY — "RJ" — FR — Carolind Scholarship '79, Forestry Technician BIA Grand Portage MN, North Shore water quality study.

COLLEEN OFTEDAHL — FR — Tree Inspector, timber cruiser, tree planter.

OJONG I. OKUNE — FR — Forestry Club, IM sports; soccer ref and coach.




CHUCK OWENS — FR — Forestry Club, SPBOC '78, IM sports '78-80, Scholarship Chairman '80, Conclave team member '78-79, Peavey Photographer '78-79, Christmas tree cut and sales '78, canoe trip '78-79, Forestry Club sgt-at-arms '79-80, Christmas tree co-chairman '78, F-Day prize chairman '78, Organized North Stars and Kicks games functions '78-79, BLM Lewiston, MT '78, DNR Duluth '77.

DORTHY PETERSON — "Dot" — FR — Forestry Club, IM sports, Conclave team member '78-79, Co-chairperson for beanfeed '79 and Conclave prizes '79, BLM '79.

JEFF ROSALES — FR.

DOUGLAS ROWLETT — FR.




DAVID I. SAKODA — "Sak" — FR — Zeta Phi, IM sports, DNR; Horland, MN, USFS Washburn, Wis.

DON SCHOFIELD — FR.

RONALD W. SEVERS — FR — U of M Forest Research Technician '72-80.

JANET K. SIEBRASS — FR — Forestry Club, IM sports, Xi Sigma Pi, Urban Forestry Task Force.




SCOTT SPATAFORE — FR.

CAROL J. STANOCH — FR — Forestry Club, Christmas tree cut and sales '78, Forestry Library Committee '78-80, Forest Resource Curriculum '78-79, Academic Freedom and Responsibility Committee '79-80.

SUSAN STRAIN — FS.

BRIAN UTZMAN — "Utz" — FR — IM sports.

RICH VANDE VOORT — FR — IM softball, basketball.

MARK J. WEBER — FR — IM basketball.

MARK WALDOCH — FR — Forestry Club, Wilderness Guard for USFS; Cook, MN '78, Forestry Technician, USFS; North Central Forest Experiment Station '79.

PETE WILLIS — FR — Peavey Photographer '76-80, Forestry Club, Punchinello Players '76-80, Sophomore rep to Student Faculty Board '77, Junior rep and chairman '78, Christmas tree chairman '79, Conclave team member '77-79.

DAREN WYSOCKI — FR.

STUDENTS NOT PICTURED

SENIORS NOT PICTURED:

Forest Products

Daniel L. Anderson
Blair J. Froseth
Dennis B. Gonczy
James G. Haygreen
Thomas Kripotos
Bjarne H. Lee
Lowell Brian Lunde
Rodney A. Marquardt
Michael W. McBain
Tom McMillan
Brad Nielsen
Michael Ogorzalek
Philip Pennington
Barbara L. Peterson
Michael Rask
Jim Sandusky
Rod Sandboe
Mike Swanson
Brad L. Thompson
Anthony G. Van Rossum
Brett W. Vaughn
Ronald J. Weber
Kurt D. Wolfe
Steven C. Zvlkowski

Forest Resources

Scott E. Aksamit
Michael N. Baker
Steven P. Benson
Alfred C. Biagi
Mitchell J. Bouchonville
Christopher J. Conway
Thomas T. Crumpton
Richard G. Ditlev
Miles J. Dunne
Barbara A. Ehrlich
Robert L. Heisel
Steven M. Johnson
John H. Kelly
Paul R. Kujawa
Peter G. Lindemanis
William J. Loscheider
Kevin G. Low
Thomas B. Montzka
Gail D. Nord
Mark Nelson
Paul C. Olson
Gaylord Paulson
Donald P. Schofield
James F. Simones
David J. Stephenson
Blaise R. Taylor
Terence J. Tucker

Forest Science

Susan M. Billings
John R. Stright

Recreation Resource Management

Keith W. Anderson
Kevin E. Asmussen
Elizabeth L. Berg
Charles A. Brotzler
Kathleen M. O'Reilly
Charles J. Remus
Thomas O. Wichelman

NOT PICTURED:

FP — Juniors

Steven Block
Gene D. Campobasso
Daniel D. Corbin
Terry L. Durushia
Alan T. Gusek
Mark D. Hagen

FOREST PRODUCTS
SENIORS, JUNIORS, SOPHOMORES

Anne Bartz, George Bard, Tom Pence, Steve Zylkowski, Ricahrd Enrooth, Doug Everhart, Al Grundner, John Hautman, James Sandusky, Michael Lukaska, Les Pernu, Larry Bechen, Randy Rosandich

Gregg A. Hoffman
Stephen Hunnicutt
Gary L. Kegley
Paul R. Lehnherr
Wade F. Macht
David G. Malm
Brian G. Marmorine
Eugene E. Miels
David J. Panning
Charles L. Parins
Kay D. Schweiger
Mark E. Setzer
Robert Seward
Peter L. Stahl

FP — Sophomores

Harold L. Abernathy
Rebecca A. Barile
Scott A. Beatty
Stephen J. Botzet
Lisa A. Ferren
Theodore M. Garver
Annette L. Goetsch
Thomas J. Grundner
Dwight K. Jelle
John E. Kitt
Alan P. Krocak
James M. Ninteman
Jeffrey P. Nordman
William E. Peter
Joel C. Richard
Ellen J. Schmidt
Mark D. Sweazy

FP — Freshman

Bruce D. Hall
Steven J. Orth
Bradley J. Upton

FR — Juniors

Jon M. Alness
J. Wesley Blake
John C. Cisek
John L. Colmey
Margaret M. Crowley
Michael R. DeMuth
Robert M. DeRoche
William G. Dinesen
Andrzej M. Durlik
Deborah L. Frelk
Yvonne M. Goff
Erich J. Grebner
Larry J. Himanga
Catherine M. Jacobs
Terry R. Rosequist
Jeffrey E. Roy
Virginia M. Vaughn

FR — Sophomores

Susan L. Abrahamsen
Douglas J. Bragg
Scott A. Burke
Todd A. Burnes
Karol A. Carlson
Randy A. Carlson
Steven M. Clark
Paul B. Dahl
Brian R. Denny
Laura L. Dupont
James K. Engstrom
James P. Flanary
John D. Fluegeman
Blake A. Francis
Donna R. Gehlhaart
Kathryn A. Gonyer
Dale D. Gormanson
John S. Haley
Randal R. Hamann
Sarah Hernandez
Douglas M. Hilsen
Jeffrey P. Houseman
Thomas H. Houston
Ariff Bin Ibrahim
Alister K. Innes
Elizabeth E. Jacobsen
Byron N. Jacobson
Jett, Jesse
Christa J. Johnson
Jeffrey L. Johnson
Charles C. Kersten
Michael B. Klein
Edward T. Koski
Robert D. Kumpula
Jeffrey M. Laney
Peter J. Moody
Michael P. Navin
Donald N. Nawalany
Dennis M. Nelson
Terrence W. O'Grady
Alan A. Oppenheimer
George C. Perovich
Timothy D. Petersen
Douglas J. Plasencia
Mary G. Porter
Joyce P. Sawicki
Sandra L. Schoberg
Jeffrey R. Schommer
Richard E. Stapleton
David A. Swan
John R. Tompkins
Katherine A. Turner
James S. Vaughan
Steven P. Williams
Susan J. Wilson
Brian K. Wise

FOREST RESOURCES SOPHOMORES, FRESHMEN

row one: Maryanna Harstad, Kathy Strobel, Dale Johnson;
row two: Tom Hovey, Dave Phillips, Denny Zadlo, Bill Callas

row one: Mark Swanson, Greg Vollhaber; row two;
Erick Lindberg, John Fleugeman, Peter Rotondo

Frank B. Witko
Steve D. Wytaske
Barry J. Zikmund
Elizabeth S. Zutz

FR — Freshmen

Michael D. Anderson
Lone M. Donat
Todd A. Fischer
Steven B. Gerber
Margaret M. Gromek
Michael P. Gronseth
Daniel R. Grundtner
Kirk P. Hankins
Robert J. Kensinger
Tom A. Kositzky
Lawrence A. Long
Joseph L. McDonald
David H. Merhar
Alan G. Olson
Richard A. Riemer
Kirk B. Roettgering
Elizabeth A. Sher
John O. Shulstad
Joan M. Stelman
Kevin K. Stiles
Peter H. Ulrich
George H. Weed

FS — Juniors

Barbara A. Walker

FS — Sophomores

Eric L. Kruger

FS — Freshmen

Todd A. Hubbard

RRM — Juniors

James A. Barott
Thomas D. Couling
Robert F. Klatt
Leslie A. Long
Susan E. Pocke
Marthe D. Rath
Carol A. Sersland

RRM — Sophomores

David A. Asleson
Lisa P. Buettgen
Kathryn A. Casmer
Stephanie E. Gaw
Tana Gram
Thomas J. Hakala
Michael A. Kilgore
Hal E. Kosbau
Mark H. Kovacovich
Christopher W. Kranz
Gregory S. Meyer
Daniel L. Savard
Nannette J. Wilkinson

RRM — Freshmen

Douglas E. Berens
Ann L. Walker

FOREST RESOURCES JUNIORS

row one: Wayne Herberg, Mary Belting, Tom Searles, Kelly Fleisnner, Jim Berkeland, Greg Bernu; row two: Dick Moore, Pete Bedker, Julie Carlson, Darrel (D.J.) Bakken, Dennis Duehren, Jim Williams, John Hoelmer; row three; Mick Fritchman, Lisa Hansen, Jeff Golden, Steve Nelson, Paula Larson, John Goad, Anita Burns, Steve Opseth, Jim Thompson, Bruce Overson

row one: Celeste Lewis, Doug Hankey, Sue Francisco, Carol Buche, Rebecca Spears, Russell Henly; row two: Tina Jaworski, Steve Brideford, Pat Miles, Tom Jacobwith, Rosemary Johnson, Chris Krantz, Terry Gregor; row three: Greg Arthaud, Jim Wermter, Ron Humphrey, Tim Hopkins, Tim Shannon, Brian Ayers, Tim Eul, John (J.D.) Burns, Doug Watt, Paul Olson

Graduate Students

Name	Degree Objective	Advisor
Agrawal, Mural	Ph.D	Neuman
Aube, Peter	M.S.	Rose
Ballman, Gary	Ph.D.	Merriam
Baughman, Melvin	Ph.D.	Ellefson
Benessalah, Driss	M.S.	Ek
Bennet, Steven	M.F.	Knopp
Bernath, Stephen	M.S.	Lillesand
Birdsall, Earl	M.S.	Ek
Boggio, Kim	M.S.	Gertjejansen
Bolstand, Kip	M.S.	Sinclair
Bruder, Michael	M.S.	Knopp
Burk, Thomas	Ph.D.	Ek
Capo-Sanchez, Alfredo	M.S.	Brown-Irving
Carino, Honorio	Ph.D.	Haygreen
Carlstrom	M.S.	Brooks
Clausen, John	Ph.D.	Brooks
Cudworth, Keith	M.S.	White
Cundy, Terrance	M.S.	Brooks
Deegan, George	M.S.	Gregersen
Emerson, Patricia	M.S.	White
Erkkila, Daniel	M.S.	Rose
Fereshtehkou, Saeed	M.S.	Neuman
Ferguson, Duncan	M.S.	Sinclair
Fiedler, Carl	Ph.D.	White
Goldblatt, Marty	M.F.	Irving
Govett, Robert	M.S.	Sinclair
Gullett, Thomas	Ph.D.	Brooks
Green, David	Ph.D.	Grigal
Hadikusumo, Sutjipto	M.S.	Erickson
Harding, Roger, B.	Ph.D.	White
Hoffman, Thomas	M.S.	Hendricks
Hoganson, Howard	Ph.D.	Rose
Hughes, Mark	M.S.	Gertjejansen
Hyun, Jung Oh	Ph.D.	Mohn
Jathar, Ravindra	M.S.	Haygreen
Kunze, Teresa	M.S.	Bowyer
Lackey, Michelle	M.S.	Alm
LaMoise, Anne	M.S.	Lillesand, Ek
Lumbantobing, Togar	M.S.	Erickson
Mayhew, Ann	M.S.	Merriam
McCann, Brian	M.S.	Ellefson
Merrill, Robert	M.S.	Mohn
Miller, Nancy	M.S.	Meyer
Milton, Floyd	M.S.	Hendricks
Mital, David	M.S.	Sucoff
Moeur, Melinda	M.S.	Ek
Murchison, Gary	Ph.D.	Ek, Rose
Murphy, Dennis	Ph.D.	Rose
Needham, Maurine	M.S.	Alm
Nichols, Thomas	M.S.	Alm
Nygaard, Sharon	M.S.	White
O'Brien, David	M.S.	Sinclair
O'Laughlin, John	Ph.D.	Ellefson
Okoro, Samuel	Ph.D.	Gertjejansen
Olson, Steven	M.S.	B.Brown
Ovalle, Rafael	M.S.	Neuman
Peterson, Gordon	M.S.	Neuman
Popp, Michael	M.S.	White
Propst, Richard	M.S.	Ek
Radsliff, Wendy	M.S.	Mohn
Raines, Dana	M.S.	Sucoff
Richards,Donald	M.S.	Alm
Rowe, Blake	M.S.	Ellefson
Russell, David	M.F.	Bakuzis
Rutherford, Susan	M.S.	Mohn
Samayoa-Pineda, R.	M.S.	Erickson
Sames, Wayne	M.S.	Merriam
Schmitt, Mark	Ph.D.	White
Scott, Charles	Ph.D.	Ek
Seavey, Robert	M.S.	Erickson
Sibal, Pedro	Ph.D.	Bowyer
Silitonga, Toga	Ph.D.	Haygreen
Sloan, John	M.S.	Kurmis
Springan, Mark	M.S.	Meyer
Steigerwaldt, William	M.S.	Meyer
Stiegler, Jeannette	Ph.D.	Brooks
Strees, Anne	Ph.D.	Gregersen
Strutzel, Mary	M.S.	Gertjejansen
Taaya, M'Hammed	Ph.D.	Brooks
Tompkins, Thomas	M.S.	Neuman
Thompson, Jerrilyn	M.S.	Merriam
Walvatne, Paul	M.S.	Sucoff
Webb, Sara	M.S.	Kurmis
Weicherding, Pat	Ph.D.	Scholten
Westfield, Lee	M.S.	Meyer
White, Alan	Ph.D.	Hansen
Wieland, Walter	M.S.	Knopp
Yuan, Jung John	M.S./M.F.	Irving

Ph.D. Candidates (not in residence)

Name	Adviser
Borovsky, John	Grigal
Brakel, William	Skok
Cubbage, Fred	Gregersen
Elwood, Norman	Rose
Houghtaling, Thomas	Gregersen
Knighton, Dean	Grigal
Moreno, Manuel	Gregersen
Olson, Kurt	Meyer
Riemenschneider, Don	Mohn
Werth, Lee	Meyer

The Forestry Club wishes to take this opportunity to thank all the merchants who have help support Conclave and F-Day.

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Don Schriver,
logging
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Sage Advice

HOW LONG CEDAR?

Question: Will we ever run out of Cedar?

Answer: A study by Chas. L. Bolsinger — **Western Red Cedar — A Forest Resource in Transition** — provides a detailed and timely answer to this question. Briefly, this USDA publication indicates that in all states combined, the net annual growth is about half the cutting rate.

In Idaho and Alaska the depletion rates are negligible. In Montana, cedar seems to be gaining by a small amount. However, Washington's Red Cedar would last for little more than 30 years (the old growth, expressed in volume of trees 21" and larger, would last about 20 years).

Oregon's old growth Red Cedar would be gone in about 50 years. And concentrated reserves of old growth Cedar on private lands will be exhausted in less than 20 years.

The shake and shingle industry is most likely to feel the effect of the cedar supply pinch first because of its dependence on old growth. British Columbia has over 3½ times the volume of the U.S.

Ask me for a copy of this report if you would like further information.

Don Sage is President of ***Gabler-Sage Lumber Company*** *of Minneapolis, and former owner and founder of* ***Sage Cedar Distribution Center.*** *If you have a question on Cedar please call Don Sage.*

Locally, dial 560-5150. On the Minnesota WATS — 1-800/842-2676, or on the Out-Of-State WATS — 1-800/328-2521.

CEDAR SHAKE TERMINOLOGY:

Question: A customer asked us for "Colonial Shakes." Is there such a thing and just what are they?

Answer: A "Colonial" Shake is the terminology used by some old time manufacturers to describe "Heavy" Shakes. Since 1977, the proper description of heavy shakes is "that which has a butt thickness of 3/4"." The old reference of 3/4"-5/4" (1 1/4") was officially dropped by the Western Red Cedar Shingle and Handsplit Shake Bureau.

The grade has not changed, but the mills are not required to cut the shake thicker than 3/4" on the butt edge. There may still be some shakes having a butt thickness in excess of 3/4" in a square, but it is not required by Bureau rules.

And while we're on the topic of shakes, "Salems" is terminology describing medium shakes — those having a butt thickness of 1/2"-3/4". Officially, the description of mediums has also been changed to read 1/2" and not 1/2"-3/4".

"Jumbos" are custom cut shakes — having a butt thickness greater than the minimum standard grading rules. These are available on a special unit order basis.

Don Sage is President of ***Gabler-Sage Lumber Company*** *of Minneapolis, and former owner and founder of* ***Sage Cedar Distribution Center.*** *If you have a question on Cedar please call Don Sage.*

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ADVERTISING DIRECTORY

NOTES

Without the bevy of envelope stuffers (only a very few are pictured) the editors would still be working on the first Alumni mailing

Just because Peter (our prize photographer) spends endless hours in dark places with his hands in warm liquids, it doesn't mean he is weird. A little crazy, maybe . . .

The job is done, the equipment is laid to rest. The work was hard, but satisfying. A special thanks to you, Ken Winsness. — The editors, Becci Spears and John Goad

Frontiers are where you find them...

To our forefathers, the *Western Frontier* meant opportunity, adventure, and challenge. The loyalty of those drawn into political activity by the 1964 Presidential campaign was focused upon the opportunity and challenge of the *"New Frontier"*.

The *frontier* for today's forester lies in the *opportunity* to share in building forest management policies to meet the wood fiber needs of the nation...the *challenge* of presenting those policies to a public which too often does not understand the real worth of the renewability of trees.

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